Willows Preparatory School Development Critical Areas Assessment

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1.0 INTRODUCTION

This report describes the jurisdictional wetland delineation conducted at the Willows Preparatory School Development property. The school is proposing to redevelop their property into an education center. The combined land use will include tenant improvements to the existing recreation building, preservation of the existing sanctuary/church, possible renovation of one or more of the existing structures and future construction of new educational buildings. The proposed development includes additional parking and will be located south of NE 124th Street and east of Redmond Woodinville Road NE, in Redmond, Washington.

1.1 Project Location

The Willows Preparatory School property is located at the northern edge of the city limits, in King County at 12348 Redmond Woodinville Road NE, within the city limits of Redmond, Washington (Figure 1). The study area is located immediately east of Redmond Woodinville Road NE and immediately south of NE 124th Street (Figure 1).

1.2 Site Description/Existing Conditions

The study area is bordered to the north by NE 124th Street, to the east by a steep ravine that conveys a stream under NE 124th Street, vacant lots and developed residential properties, to the south by residential development and NE 120th Way, and to the west by Redmond Woodinville Road NE. The proposed development involves two partially developed parcels (King County Assessor's Parcels 262605-9019 and 262605-9071) that are about 12.81 acres in area, located in the southern portion of the study area. The subject property is mostly developed and has been cleared for buildings, access roads, driveways and parking lots. Onsite vegetation consists mostly of landscape plantings and open lawn areas, with some volunteer vegetation around a detention pond at the north end and volunteer alders at the approximate center of the study area. A portion of the site was used as a commercial dairy (Theno's Dairy), which is now closed. The remaining buildings used for this business are proposed to be removed as part of the planned site improvements.

Two areas that met the criteria for wetlands (Wetland A and Wetland B); hydrology, soils and vegetation, were delineated onsite (Figure 2) and were determined to be manmade based on a review of historical photographs, which show that the wetlands did not exist prior to construction of the site in 2007 (Appendix C). The manmade wetlands are bordered on all sides by roads, access drives, parking lots, commercial and residential development, and the existing sanctuary. There are no undeveloped areas in the immediate vicinity of the wetlands. There is a grassy knoll onsite that borders Wetland A to the southwest, and an undeveloped forested area with a Class II stream (City of Redmond) located approximately 200 feet to the east of Wetland A. Wetland A is separated from the forested area by a parking lot. Areas to the northwest of the study area are predominately farmland. Areas to the north are residential and areas to the west are recreational. The area to the east of the study area is mostly undeveloped and forested. The project parcels are zoned R-1 at the north end of the study area and R-4 in the southern portion, per the City of Redmond Zoning Map. The City of Redmond Comprehensive Land Use designation is Semi-rural at the north end and Single-Family Urban in the southern portion of the study area.

The topography of the site is rolling with a small area of slightly steeper slopes (approximately 29 percent) in the approximate center and northeastern portions of the area (Figure 3). There are retaining walls, supporting hillslopes most likely created during development of the site. Historical photos do not show the presence of retaining walls or hillslopes prior to development of the site in 1990 (Appendix C).

There are five detention ponds, constructed after 2006/2007, located within the study area; four concrete lined ponds are located at the west entrance to the study area, off of Redmond Woodinville road. The fifth pond is located at the north end of the study area. The northern pond has accumulated silt and contain cattails and willows. Overflow from the pond drains to the north by way of a piped drainage system. Water levels in the pond were well below the overflow pipe at the time of investigation. Some areas of the pond are rock lined. Photographs for all five detention ponds are provided in Appendix C.

Weather conditions during the January and February 2016 site investigations were partly cloudy and dry with temperatures in the low to mid-40s. Site conditions were wet due to moderate to heavy rainfall two to three days preceding the site investigation.

1.3 Project Description

The Willows Preparatory School has existed since the 1990s. The school eventually purchased all five of the parcels located in the southeast corner of the intersection. The school proposes to develop two of the parcels. The two parcels will be a combined religious and education center. The combined land use will include tenant improvements to the existing recreation building, preservation of the existing sanctuary/church, possible renovation of one or more of the existing structures, future construction of new educational buildings, access drives and additional parking.







Legend

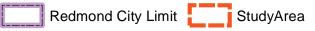


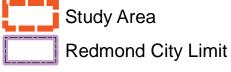


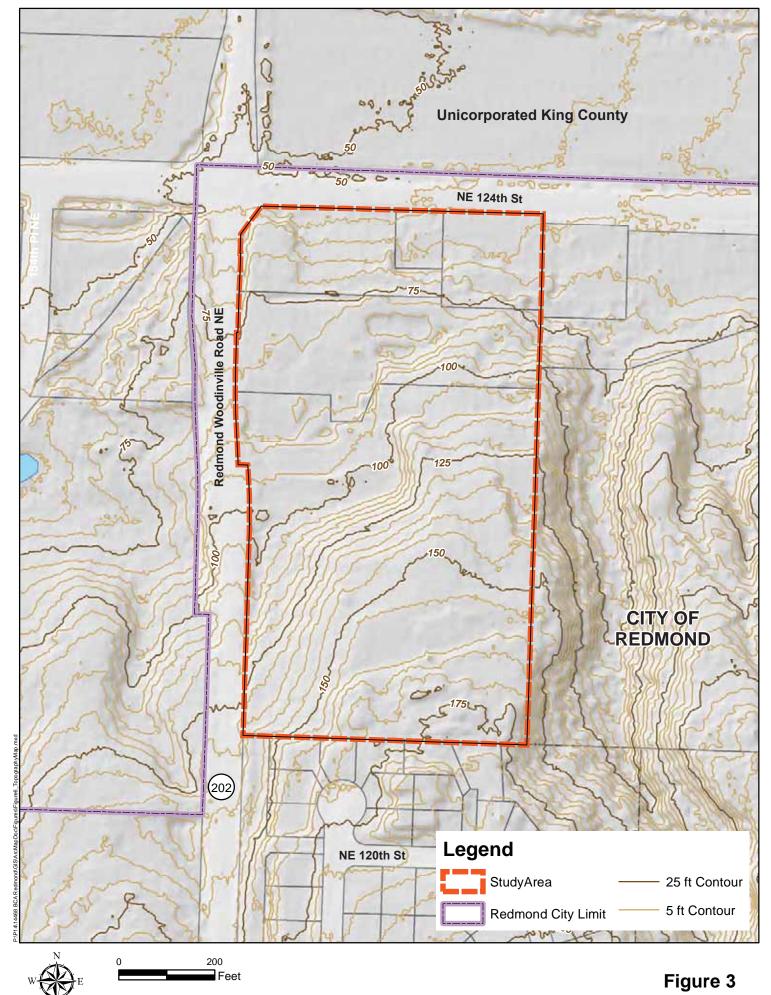
Figure 1 Vicinity Map





Streams (City of Redmond)





Source: Topography from LiDar

USGS Topography Map

2.0 METHODOLOGY

PACE Engineers staff delineated two wetlands onsite in January and February 2016. The study area was surveyed using the guidelines put forth in the *Corps of Engineers Wetlands Delineation Manual for the Western Mountains, Valleys, and Coast Region* (Version 2.0, May 2010), as required by the Corps of Engineers and the City of Redmond. Wetlands were rated and classified using the Washington State Department of Ecology (Ecology) *Wetland Rating System for Western Washington* (2014 update). Soils were identified using the 1990 Edited and Revised Edition of the Munsell Soil Color Charts. Wetlands were flagged with pink "Wetland Delineation" flagging and labeled using a consecutive alpha-numerical system. Data points were labeled SP-1, SP-2, etc. Flagging locations were mapped in the field using a handheld Topcon Tesla-Geo Model 2-5M. Wetland Data and Rating Forms are provided in Appendices A and B.

Desktop research and onsite wetland delineation was performed by Eilean Davis, Senior Planner and Certified Wetland Management Scientist at PACE Engineers.

3.0 DESKTOP REVIEW AND SITE OBSERVATIONS

Before conducting the onsite field investigation, a literature and website review was conducted to review and identify existing information on soils, wetlands, site topography, wildlife presence and other critical area and site data within the study area. A list of the resources used are listed below:

- U.S. Geological Survey (USGS) topographic map (USGS, 2011)
- National Wetlands Inventory map of project area online version located at: http://www.fws.gov/wetlands/Data/mapper.html)
- Web Soil Survey (USDA) located at: http://www.or.nrcs.usda.gov/pnw_soil/wa_reports.html
- City of Redmond Critical Areas Regulations, RCZ 21.64, found at http://online.encodeplus.com/regs/redmond-wa/docviewer.aspx?secid=1046&keywords=21.64#secid-1046
- City of Redmond Standard Maps, found at http://www.redmond.gov/Government/MapsGISservices/StandardMaps
- Hydric Soils List King County Area Washington (NRCS, 2014)
- Western Mountains, Valleys, and Coast, 2014 Regional Wetland Plant List, http://wetland_plants.usace.army.mil/
- WDFW Priority Habitats and Species Maps online version located at: http://wdfw.wa.gov/mapping/phs/

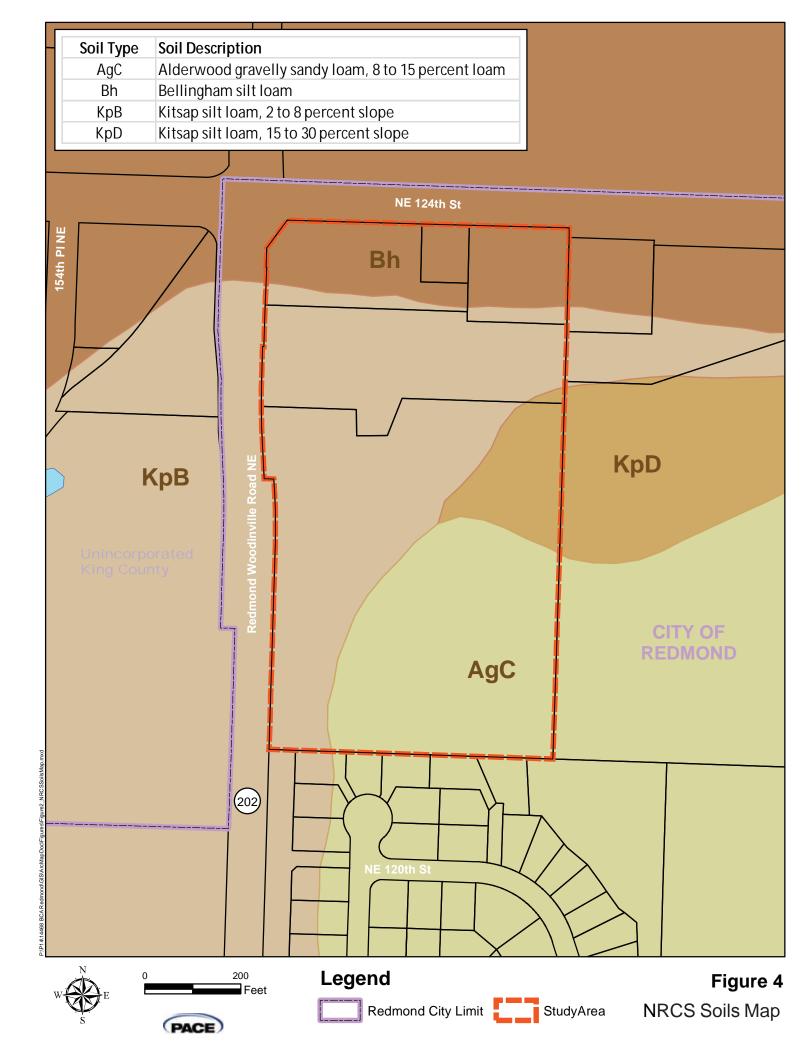
3.1 Existing Site Documentation

The following information was gathered during initial desktop research and review of available information.

3.1.1 USDA Natural Conservation Resources Service Soil Survey

Soils within the study area are classified as Alderwood gravelly sandy loam, Bellingham silt loam, and Kitsap silt loam. These soils are listed as hydric on the 2014 National Hydric Soils List (USDA Natural Resources Conservation Service Soils, National Hydric Soils List, 2014). Alderwood soils are described as moderately well drained formed in

glacial drifts or outwash or dense glaciomarine deposits. Kitsap soils are also moderately well drained and formed in lacustrine deposits with a minor amount of volcanic ash. Bellingham soils are described as poorly drained in alluvium. Kitsap soil areas are classified as "Farmland of statewide importance". Alderwood and Bellingham soils are classified as "Prime farmland if irrigated". (Figure 4.)



3.1.2 National Wetland Inventory Map

According to the National Wetland Inventory, there are no wetlands located within the study area. However, there is a palustrine emergent wetland located roughly 500 feet northeast of the study area as well as four other palustrine wetlands; forested, scrubshrub, open water, and emergent, located north of the study area, north of NE 124th Street, within 500 feet of the study area. (Figure 5). Portions of these NWI wetlands appear to have been replaced by development activities.

3.1.3 City of Redmond & King County Inventoried Wetlands and Streams

A review of the City of Redmond Critical Areas Map indicates the presence of a wetland offsite to the east of the study area. This system does not show up on either the NWI maps or the King County Critical Areas maps. No wetlands are shown within the study area. The City of Redmond Streams Classification Map indicates the presence of a Class II stream located offsite to the east that has been culverted under NE 124th Street that most likely, eventually connects to the wetland complex located to the north/northeast. The stream is a tributary of the Sammamish River but is not fish bearing. Per RZC 21.64.020, Class II streams have a 100 foot buffer plus a 50 foot outer buffer. There are no streams located within the project properties. (Figure 6) The stream outer buffer extends into the project site in some locations.

Similar to the NWI map, the King County iMap also shows the presence of a wetland complex located north of the study area, north of NE 124th Street. In addition, the King County maps identify an unclassified stream located to the northeast of the site that flows northwest to the wetland complex located north of NE 124th Street. The unclassified stream is incorrectly mapped as shown flowing across the northeast corner of the site. In reality the stream makes a turn to the northeast before entering the subject property and flows to the northeast and under NE 124th Street before flowing to the west. The stream is shown as a tributary to the Sammamish River. (Figure 7)

The culvert for the stream located to the northeast of the study area, is located just south of NE 124th Street and is shown on the Delineated Areas map (Figure 2) included with this report.

3.1.4 City of Redmond Fish and Wildlife Habitat Map

According to the City of Redmond Fish and Wildlife Habitat Conservation Areas Map, there are no fish or wildlife corridors or habitat located within or near the project study area (Figure 8)

3.1.5 Washington Department of Fish and Wildlife Priority Habitat Map

A review of the Washington Department of Fish and Wildlife (WDFW) Priority Habitat Species (PHS) website, showing masked data, indicates that there is aquatic habitat mapped within the wetland complex located across NE 124th Street, north of the study area. There are no fish or wildlife corridors located within the study area. The WDFW PHS data is provided in Appendix D.

3.2 Topography

Topography within the study area has been modified by past construction activity. Currently, the topography within the study area is rolling with some areas of steep slopes. These slopes were most likely created by construction when soils were stockpiled to create the detention ponds and develop the site. The steeper slope areas are retained by constructed concrete walls made of ecology block. A review of historical photos shows the site prior to development of the ponds and existing buildings without these retaining walls and steep slopes. Historical photos are provided in Appendix C.

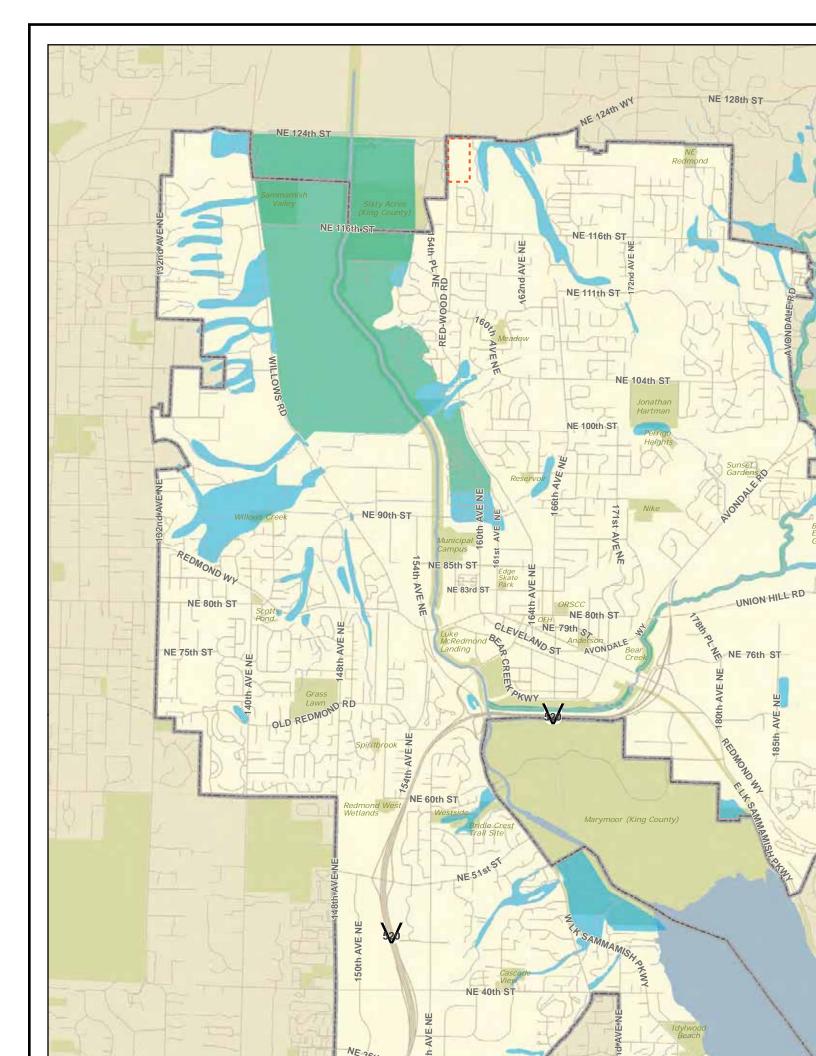
The City of Redmond has designated an area at the eastern edge of the property as an erosion hazard area (Figure 9) that is associated with the steep ravine to the east of the study area. The King County iMap shows a similar erosion hazard area in the eastern edge of the study areas (Figure 10). Rocks have been placed at the northeast corner of Wetland B to control erosion in the northeast corner of the wetland. There were indications of slight hillside sloughing observed in the hillslope located in the approximate center of the study area, just south of the existing church building and walkway.

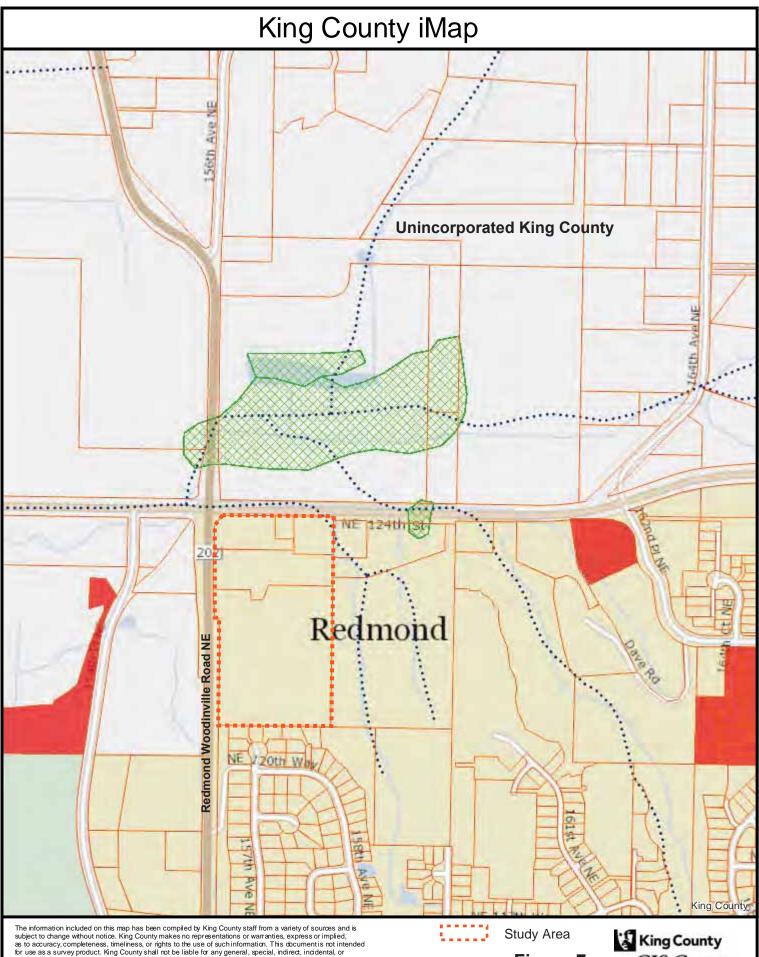






Figure 5



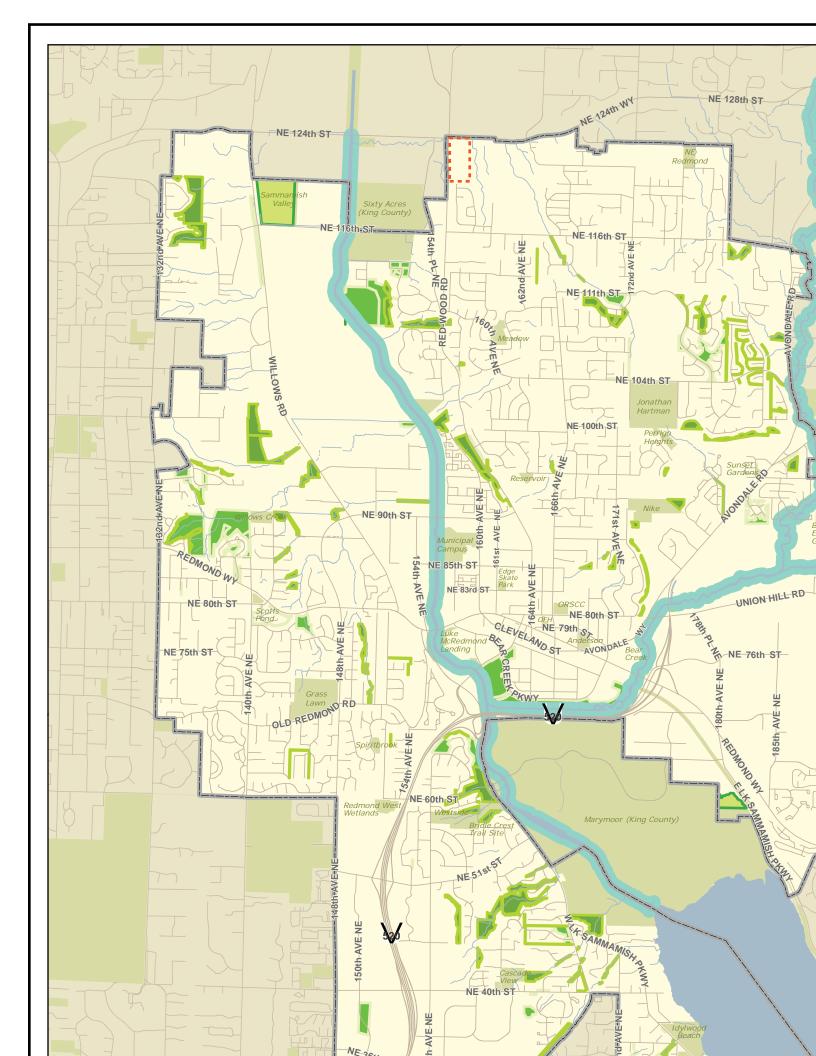


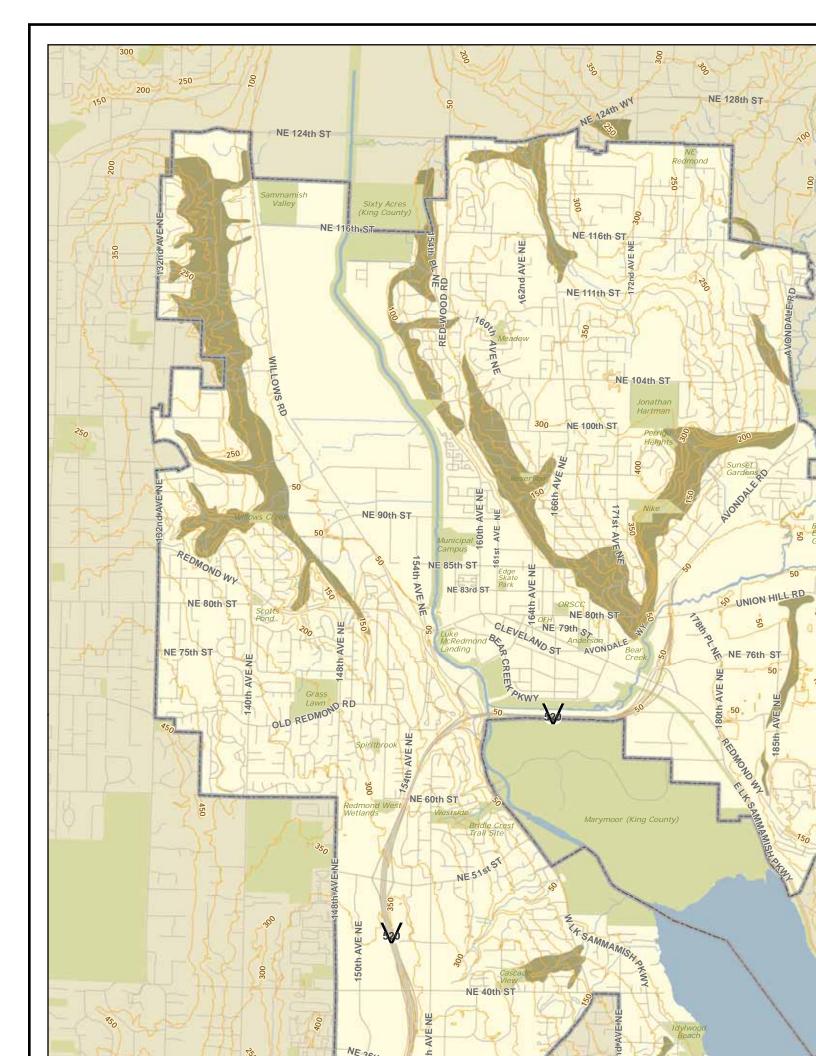
The information included on this map has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This obcument is not intended for use as a survey product. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, but revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

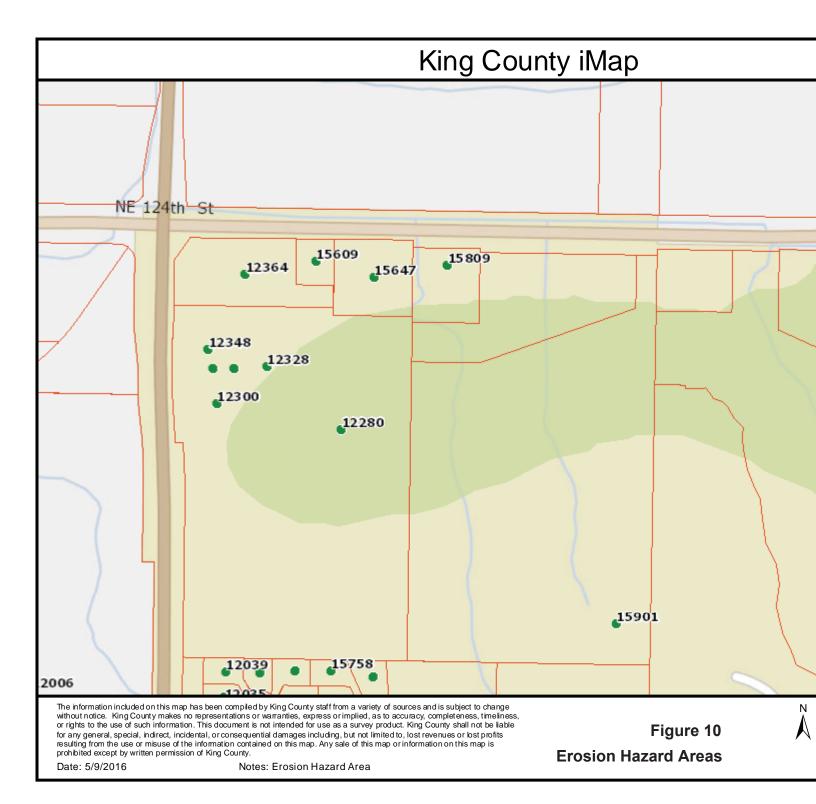
Date: 2/4/2016 Notes: Figure 7

King County Critical Areas









3.3 Uplands

The upland areas within the study area boundary are predominately cleared, landscaped, and maintained with some small areas of deciduous trees; including a stand of red alder (*Alnus rubra*) trees and saplings in the approximate center of the study area at the southwest corner of the existing sanctuary building, a stand of alders at the northwest corner of the study area, and a small scrub-shrub area of scotch broom (*Cytisus scopariuus*) and Himilayan blackberry (*Rubus armeniacus*) at the northeast corner of the study area. Other vegetation within the uplands include Douglas fir (*Psuedotsuga menzeisi*), and non-native grasses such as bentgrass (*Agrostis sp.*), fescue (*Festuca sp.*), and reed canarygrass (*Phalaris arundinacea*). The area also contained a large percentage of moss.

Soils within sample pits dug in upland areas around Wetland A generally consisted of silt loam soils with a great deal of sand, gravel, and cobbles, with a Munsell soils color of mostly 10YR 4/3. Soils within sample pits dug in upland areas around Wetland B were clay loam with sand, gravel, and cobbles, and a Munsell soils color of 10YR 4/3. Soils within the upland areas were dry.

3.4 Wetlands

Two wetlands (Wetland A and Wetland B) were delineated onsite by PACE staff during site investigations conducted in January and February 2016. Delineated areas are depicted in Figure 2. Because the delineated wetlands have been determined to be manmade and regulation is not suggested, buffers are not shown.

3.4.1 Wetland A

Wetland A is an approximately 0.25 acre manmade slope wetland located at the eastern edge of the study area, south of and immediately adjacent to the sanctuary building. The slope wetland is located at the base of a hill slope, confined by a parking lot and walkway to the east and north. Based on field investigations and review of historical aerial photos of the site, the wetland appears to be manmade and was most likely created when the sanctuary building and adjacent parking lot and walkways were constructed. Past construction activity has resulted in the excavation, redistribution, and compaction of soils on site. The soils excavation and redistribution that occurred south of the sanctuary building during construction more than likely created the hillslope. Runoff from the manmade hillslope, and adjacent impervious surfaces, flows easterly and northerly where it is impounded by the walkway curb before flowing west along the depressional area adjacent to the walkway curb before entering the City's stormwater system to the west. Figure 2 shows the drainage pattern from the wetland to the stormwater system within Redmond-Woodinville Road to the west. See Appendix C for site photos showing historical site conditions and construction activities.

Vegetation in Wetland A met the for wetland vegetation and is dominated by bentgrass (*Agrostis sp.*), lamp rush (*Juncus effusus*), reed canarygrass (*Phalaris arundinacea*), fescu (*Festuca sp.*), and creeping butter cup (*Ranunculus repens*), with Red alder (Alnus rubra) and other non-native grasses. There is also a large percentage of moss.

Three soil pits were dug within the wetland; SP1, SP3 and SP5 and revealed silt and sandy loam soils. Soils within the wetland met the criteria for hydric soils with Munsell

Soil colors of 10YR 3/1 and 10YR 3/2 and redox features of 7.5YR 4/6, 7.5YR 4/8, and 7.5YR 5/8. Soils were saturated to the surface.

Hydrology within the sample pits also met the wetland criteria with surface water of less than 0.25 inches and surface water of between 0.25 to .5 inches in the wetland at the time of investigation. Wetland A extends downslope from the southeast corner of the wetland, and flows in one direction (northeast) to the bottom of the hill slope, where it is contained by a concrete curb. A drainage channel has been excavated immediately adjacent to the concrete curb, and holds water before directing flows to the west. The wetland's source of hydrology is precipitation and hillside seepage; water was observed seeping into the sample pits and there had been about three days of heavy rain preceding the site investigation.

Using the Cowardin classification method (Cowardin et al, 1979), Wetland A, though manmade, would be classified as a Palustrine Emergent Seasonally Saturated Excavated (PEMBx). The small percentage of Red alder located at the northwest corner of the wetland provides very little cover for the wetland.

Using the Washington State Department of Ecology (Ecology) Revised 2014 Wetland Rating System, and rating the wetland as a slope wetland, Wetland A would be a Category IV wetland with a total score of 15 (water quality 6, hydrology 5, habitat 4). The wetland scores low values for water quality and hydrologic function due to a lack of water quality improvement potential and lack of potential to improve flooding. The habitat value in Wetland A is rated low to moderate for its lack of plant diversity and potential to support habitat functions. Because the area met the wetland criteria, wetland data and rating forms were completed and are provided in Appendices A and B.

The habitat score for this wetland is 4. Per City of Redmond Zoning Code, RZC 21.64, a Category IV wetland with a low habitat value, in a high impact land use area requires a 50 foot buffer. However, the wetland is manmade and the buffer for Wetland A has already been impacted by development and regular mowing. Photographs of the area delineated as Wetland A and historical photos showing development of the area are provided in Appendix C.

3.4.2 Wetland B

Wetland B is an approximately 0.05 acre manmade depressional wetland located on the north end of the study area, south of and adjacent to NE 124th Street. Based on historical photos, this wetland also appears to be manmade, impounded by a constructed earthen berm that created the depressed area. Past construction activity has resulted in the excavation, redistribution, and compaction of soils within this location. Review of historical aerial photos confirms this activity (Appendix C).

Vegetation in Wetland B met the criteria for wetland vegetation and is dominated by reed canarygrass (*Phalaris arundinacea*) and fescu (*Festua sp.*) with some lamp rush (*Juncus effusus*) and moss.

Two soil pits were dug within the wetland (SP7, SP9) and revealed silt loam soils. Soils within the wetland met the criteria for hydric soils with Munsell Soil colors of 10YR 2/1 and 10YR 3/1 and redox features of 10YR 4/6 and 7.5YR 5/4. Soils within the wetland were saturated to the surface with about 2.5 inches of surface water present in the wetland at the time of the site investigation.

Water is impounded within the depressional areas before draining to the east and eventually flowing to the offsite stream located east of the study area. Cobble has been placed at the outflow location (Figure 2), most likely to prevent erosion on the slope. The source of hydrology in the wetland is mostly precipitation and runoff from the asphalt surfaces to the south. Figure 2 shows the location of the wetland and the drainage at the northeast corner.

Using the Cowardin classification method, Wetland B, though manmade, would be classified as a Palustrine Emergent Seasonally Saturated Excavated (PEMBx). Nearby trees provide little if any cover for the wetland.

Using the Washington State Department of Ecology (Ecology) Revised 2014 Wetland Rating System, and rating the wetland as a depressional wetland, Wetland B would be a Category III wetland with a total score of 18 (water quality 7, hydrology 6, habitat 5). The wetland scores moderate values for water quality and low values for hydrologic function due to a lack of water quality improvement potential and lack of potential to improve flooding. The habitat value in Wetland B is rated low to moderate for its lack of plant diversity and potential to support habitat functions. Because the area met the wetland criteria, wetland data and rating forms were completed and are provided in Appendices A and B.

The habitat score for this wetland is 5. Per City of Redmond Zoning Code, Title 21.64, a Category III wetland with a low habitat value in a high impact use area requires a 150 foot buffer. However, the wetland is manmade and the buffer for Wetland B has already been impacted by development. Photographs of the area delineated as Wetland B and historical photos showing development of the area are provided in Appendix C.

3.5 Aquifer Recharge Areas/Wellhead Protection Zones

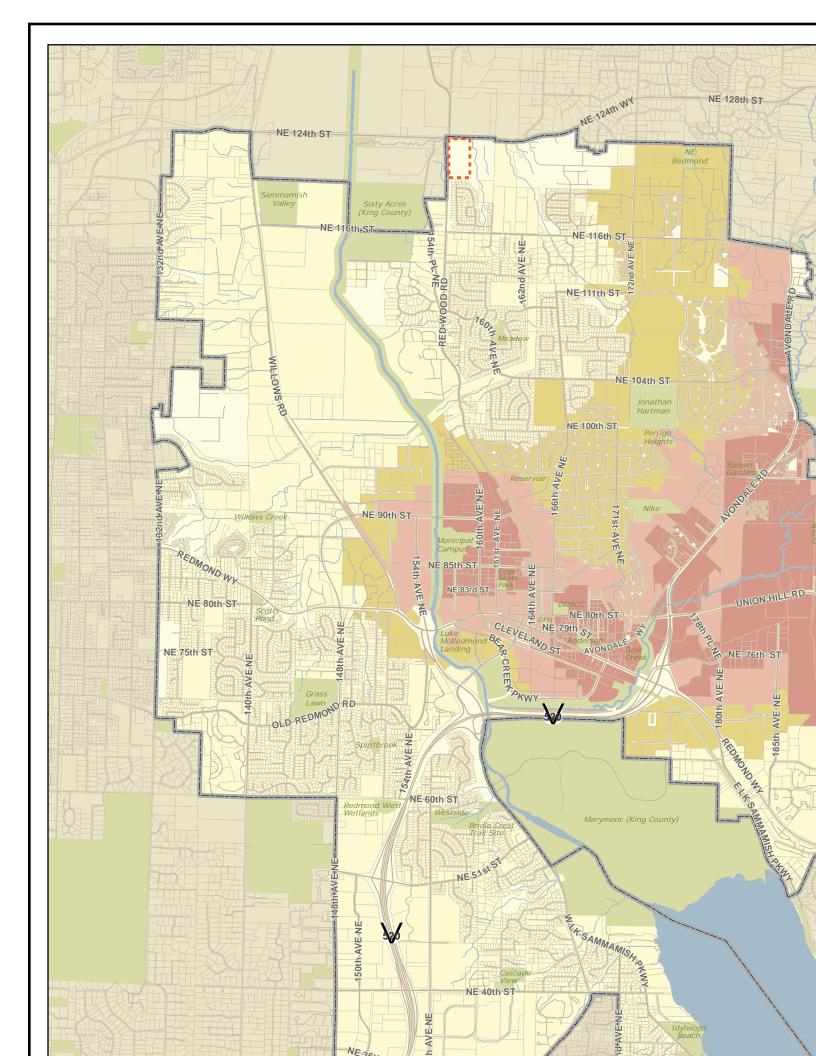
Per the City of Redmond Wellhead Protection Zones map and Property Viewer information, the study area is not located within a critical aquifer recharge area. However, per RZC 21.64.050, all areas of the City not located within Protection Zones 1, 2, or 3, are considered to be within Zone 4 (Figure 11). RZC 21.64.050 prohibits the alteration of a critical aquifer recharge area.

Development of the properties as proposed would not alter a critical aquifer recharge area. The proposed development does not propose to store, use, or produce hazardous materials that could be detrimental to a critical aquifer recharge area, as described in RZC 21.64.050(C). The proposed buildings will be connected to the City's sanitary sewer system and the City's stormwater collection system. The proposed development would not alter riparian stream corridors (RZC 21.64.020 D); the Class II stream to the east of the project is approximately 200 feet away from Wetland A and separated from the Category IV wetland by a parking lot. The stream is more than 300 feet away from Wetland B and separated by development. The project

would also have no impact on fish and wildlife habitat conservation areas (RZC 21.64.020 E), frequently flooded areas (RZC 21.64.040 B), or geologically hazardous area (RZC 21.64.060 D).

3.6 Wildlife

No wildlife was observed during the January and February 2016 site investigations, and the study area is not known to provide habitat for any federal or state listed species. WDFW lists the wetland complex to the north of the study area as wetland habitat but does not identify a listed species. A copy of the Fish and Wildlife PHS report is provided in Appendix D.



4.0 SUMMARY/CONCLUSION

Based on the research conducted for this site, the onsite wetlands and steep slope areas are clearly manmade. Soils and topography, as well as drainage patterns, have been altered by development creating the slopes and wetlands. Therefore mitigation is not proposed.

Historical photos have been provided in Appendix C that show the development of the site as well as the creation of Wetlands A and B and the hillslopes located at the north and west sides of the site.

The proposed development would alter Wetland A, and would result in a loss of function and value, which would normally require mitigation under RZC 21.64.030 C. The project would also be required to meet the construction standards as provided in RZC 21.64.050 D. However, the wetland appears to be manmade and the function and value of Wetland A are minimal given its lack of plant diversity and potential to provide habitat, and the buffer for Wetland A has already been altered by development. Therefore, regulation of this wetland is not suggested.

Wetland B would also be impacted by the proposed development and would result in a loss of function and value, which would normally require mitigation under RZC 21.64.030 C. The project would also be required to meet the construction standards as provided in RZC 21.64.050 D. This wetland also appears to be manmade and provides little if any function and value due to its lack of plant diversity. Regulation of this wetland is not suggested.

Attachment A – Wetland Delineation Data Forms

Project/Site: Washington Cathedral	(City/Co	ounty: <u>Kir</u>	ng		Sampling Date: 1/27/	/2016
Applicant/Owner: BCA Redmond					State: WA	Sampling Point: TP-	1
Investigator(s): E.Davis			Sect	ction, Tov	wnship, Range: <u>26, 26N, 5</u>	ΣE	
Landform (hillslope, terrace, etc.): hillslope		Local	relief (co	oncave,	convex, none): concave	Slope (%): <u>2-6</u>
Subregion (LRR): A	Lat: <u>47.70</u>	09292			Long: <u>122.129664</u>	Datum: N	AVD88
Soil Map Unit Name: Kitsap					NWI classificat	tion: PEM	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ır? Yes	s 🛛 No	lo 🔲 (If	no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sign	nificantly dist	turbed?	? /	Are "No	rmal Circumstances" pres	ent? Yes ⊠ No []
Are Vegetation, Soil, or Hydrology natu				(If neede	d, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samp	oling p	oint lo	cations, transects,	important featu	res, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □		١.	l- (l- 0-		A		
Hydric Soil Present? Yes ⊠ No □			Is the Sa within a	•		о П	
Wetland Hydrology Present? Yes ⊠ No □			withina	vvetiani	u: Tes 🖂 No	, L	
Remarks: Wetland is located between the base of a hillslo	pe and a pa	rking lo	ot curb.				
VEGETATION – Use scientific names of plan	ts.						
	Absolute				Dominance Test works	heet:	
Tree Stratum (Plot size:) 1	% Cover				Number of Dominant Spe That Are OBL, FACW, or		_ (A)
2				1	Total Number of Domina	ınt	
3				1	Species Across All Strata	a: <u>2</u>	(B)
4					Percent of Dominant Spe That Are OBL, FACW, or		_ (A/B)
Sapling/Shrub Stratum (Plot size:) 1				-	Prevalence Index work	sheet:	
2				1		Multiply by:	·
3				1	OBL species		
4.				1	FACW species		
5					FAC species	x 3 =	
				r	FACU species	x 4 =	
Herb Stratum (Plot size: 5')	00		-	_	UPL species		
Agrostis sp. Juncus effusus	<u>80</u>			CW CW	Column Totals:	(A)	(B)
Ranunculus repens				C	Prevalence Index :	= B/A =	
Phalaris arundinacea				F	Hydrophytic Vegetation		<u>-</u>
5					☐ Rapid Test for Hydro	phytic Vegetation	
6						50%	
7				1	☐ Prevalence Index is	≤3.0 ¹	
8 9					☐ Morphological Adapta data in Remarks	ations ¹ (Provide suppor on a separate she	
10				1	☐ Wetland Non-Vascula	ar Plants ¹	
11				1	☐ Problematic Hydroph	ytic Vegetation ¹ (Exp	olain)
Woody Vine Stratum (Plot size:)	165				¹ Indicators of hydric soil abe present, unless distur		gy must
1					He does be d		
2					Hydrophytic Vegetation		
		= Tot	tal Cover	r		⊠ No □	
% Bare Ground in Herb Stratum							

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: PL=Pore Lining, M=Matrix. Cocation: Pl=Pore Lining, M=Matrix. Coc
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S4) Sandy Mucky Mineral (S1) Sepleted Matrix (F3) Sepleted Below Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sepleted Dark Surface (F7) Sepleted Dark Surface (F7) Redox Depressions (F8) Restrictive Layer (if present): Type: Sepleted Dark Surface (F7) Sepleted Dark Surface (F8) Sepleted Dark Su	ndicators for Problematic Hydric Soils³: 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S2) Stripped Matrix (S2) Stripped Matrix (S3) Sendy Mucky Mineral (S1) Sendy Matrix (S4) Sendy Matrix (S4) Sendy Matrix (S4) Sendy Matrix (S4) Sendy Matrix (S6) Sendy Matrix (S4) Sendy Matrix (S6) Sendy Matrix (S4) Sendy Matrix (S6) Se	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S4) Sandy Mucky Mineral (S1) Sepleted Matrix (F3) Sepleted Below Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sepleted Dark Surface (F7) Sepleted Dark Surface (F7) Redox Depressions (F8) Restrictive Layer (if present): Type: Sepleted Dark Surface (F7) Sepleted Dark Surface (F8) Sepleted Dark Su	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S7) Stripped	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S7) Stripped	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S1) Stripped	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S4) Sandy Mucky Mineral (S1) Sepleted Matrix (F3) Sepleted Below Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sepleted Dark Surface (F7) Sepleted Dark Surface (F7) Redox Depressions (F8) Restrictive Layer (if present): Type: Sepleted Dark Surface (F7) Sepleted Dark Surface (F8) Sepleted Dark Su	ndicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S7) Stripped	ndicators for Problematic Hydric Soils³: 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S4) Sandy Mucky Mineral (S1) Sepleted Matrix (F3) Sepleted Below Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sepleted Dark Surface (F7) Sepleted Dark Surface (F7) Redox Depressions (F8) Restrictive Layer (if present): Type: Sepleted Dark Surface (F7) Sepleted Dark Surface (F8) Sepleted Dark Su	ndicators for Problematic Hydric Soils³: 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1)	Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): Remarks: Trace of Gley 1 at 10 inches Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13)	Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
□ Black Histic (A3) □ Loamy Mucky Mineral (F1) (except MLRA 1) □ Hydrogen Sulfide (A4) □ Loamy Gleyed Matrix (F2) □ Depleted Below Dark Surface (A11) □ Depleted Matrix (F3) □ Thick Dark Surface (A12) □ Redox Dark Surface (F6) □ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): Remarks: Trace of Gley 1 at 10 inches Remarks: Trace of Gley 1 at 10 inches Hydd Remarks: Trace of Gley 1 at 10 inches Surface Water (A1) □ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA) □ High Water Table (A2) □ Saturation (A3) □ Salt Crust (B11) □ Water Marks (B1) □ Aquatic Invertebrates (B13)	Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
□ Depleted Below Dark Surface (A11) □ Depleted Matrix (F3) □ Thick Dark Surface (A12) □ Redox Dark Surface (F6) □ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): □ Depth (inches): □ Hyde Remarks: Trace of Gley 1 at 10 inches Hyde	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Sandy Mucky Mineral (S1) ☐ Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): Depth (inches): Depth (inches): Hydd Remarks: Trace of Gley 1 at 10 inches Hydrology Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) (except MLRA) ☐ High Water Table (A2) ☐ High Water Table (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13)	wetland hydrology must be present, unless disturbed or problematic.
□ Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) Restrictive Layer (if present): Type: □ Depth (inches): □ Depth (i	wetland hydrology must be present, unless disturbed or problematic.
□ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) Restrictive Layer (if present): Type: □ Depth (inches): □ Hyde Remarks: Trace of Gley 1 at 10 inches HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) □ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA □ High Water Table (A2) 1, 2, 4A, and 4B) □ Saturation (A3) □ Salt Crust (B11) □ Water Marks (B1) □ Aquatic Invertebrates (B13)	unless disturbed or problematic.
Restrictive Layer (if present): Type:	
Type:	ric Soil Present? Yes ⊠ No □
Remarks: Trace of Gley 1 at 10 inches Hyd Remarks: Trace of Gley 1 at 10 inches HydROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Salt Crust (B11) Water Marks (B1) Hyd Hyd Aquatic Invertebrates (B13)	ric Soil Present? Yes ⊠ No □
Remarks: Trace of Gley 1 at 10 inches A	ric Soil Present? Yes 🗵 No 🗌
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Saturation (A3) Aquatic Invertebrates (B13)	
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA High Water Table (A2) 1, 2, 4A, and 4B) Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13)	
□ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA □ High Water Table (A2) 1, 2, 4A, and 4B) □ Saturation (A3) □ Salt Crust (B11) □ Water Marks (B1) □ Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required)
☐ High Water Table (A2) 1, 2, 4A, and 4B) ☐ Saturation (A3) ☐ Salt Crust (B11) ☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13)	☐ Water-Stained Leaves (B9) (MLRA 1, 2,
□ Saturation (A3) □ Salt Crust (B11) □ Water Marks (B1) □ Aquatic Invertebrates (B13)	4A, and 4B)
☐ Water Marks (B1) ☐ Aquatic Invertebrates (B13)	☐ Drainage Patterns (B10)
	☐ Dry-Season Water Table (C2)
	⊠ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3) ☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Geomorphic Position (D2)
☐ Algal Mat or Crust (B4) ☐ Presence of Reduced Iron (C4)	☐ Shallow Aquitard (D3)
☐ Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6)	FAC-Neutral Test (D5)
☐ Surface Soil Cracks (B6) ☐ Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
 ✓ Inundation Visible on Aerial Imagery (B7) ✓ Other (Explain in Remarks) 	☐ Frost-Heave Hummocks (D7)
☐ Sparsely Vegetated Concave Surface (B8)	
Field Observations:	
Surface Water Present? Yes ⊠ No □ Depth (inches): < <u>.25</u>	
Water Table Present? Yes ☑ No ☐ Depth (inches): 2	
· · · · · · · ·	drology Present? Yes ⊠ No □
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	able:
Remarks: Wetland is located between a hillslope and the curb of a parking lot to the east and a walkwinvestigation. Hillside seepage into soils pit observed.	

Project/Site: Washington Cathedral	C	City/Cou	unty: <u>King</u>		Sampling Date: 1/27/20)16
Applicant/Owner: BCA Redmond				State: WA	Sampling Point: TP2	
Investigator(s): E. Davis			Section, To	ownship, Range: <u>26, 26N, </u>	5E	
Landform (hillslope, terrace, etc.): hillslope		Local r	elief (concave	, convex, none): convex	Slope (%):	: <u>2-6</u>
Subregion (LRR): A	_ Lat: <u>47.70</u>	9292		Long: 122.129664	Datum: NA\	/D88
Soil Map Unit Name: <u>Kitsap</u>						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology sigr	•		,	ormal Circumstances" pres	ent? Yes⊠ No□	
Are Vegetation, Soil, or Hydrology natu				led, explain any answers in		
SUMMARY OF FINDINGS – Attach site map						s, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒						
Hydric Soil Present? Yes ☐ No ☒			s the Sampled		- 17	
Wetland Hydrology Present? Yes ☐ No ☒		W	ithin a Wetla	nd? Yes □ No	o 🔀	
Remarks:		·				
VEGETATION – Use scientific names of plan	ts.					
			ant Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size:) 1			es? Status	Number of Dominant Sp That Are OBL, FACW, o		(A)
2				Total Number of Domina	ant	
3				Species Across All Strat		(B)
4				Percent of Dominant Sp	ecies	
Sapling/Shrub Stratum (Plot size: 5')		= Tota	al Cover	That Are OBL, FACW, o	r FAC: 100	(A/B)
1. Alnus rubra	10	Υ	FAC	Prevalence Index work	sheet:	
2				Total % Cover of:	Multiply by:	
3				OBL species	x 1 =	_
4				FACW species	x 2 =	_
5				FAC species	x 3 =	_
(5)	10	= Tota	al Cover	FACU species		
Herb Stratum (Plot size: 5')	0.5	V	E40	UPL species		
Agrostis sp. Festuca arundinacea			FAC	Column Totals:	(A)	(B)
3				Prevalence Index	= B/A =	
4				Hydrophytic Vegetation		
5				☐ Rapid Test for Hydro		
6				□ Dominance Test is >	50%	
7.				☐ Prevalence Index is	≤3.0 ¹	
8 9				☐ Morphological Adapt data in Remarks	tations ¹ (Provide support or on a separate sheet)	
10				☐ Wetland Non-Vascul	lar Plants ¹	
11				☐ Problematic Hydroph	nytic Vegetation ¹ (Explai	in)
Woody Vine Stratum (Plot size:)	100			¹ Indicators of hydric soil be present, unless distur		must
1				Lhadnamhad' -		
2				Hydrophytic Vegetation		
		= Tota	al Cover		s⊠ No □	
% Bare Ground in Herb Stratum						
INGINAINS.						

Profile Desc	ription: (Describ	e to the c	lepth ne	eeded to docui	ment the	indicator	or confirm	n the ab	sence	of indicators.)
Depth	Matrix				x Feature					
(inches)	Color (moist)	%	Colo	or (moist)	%	Type ¹	Loc ²	<u>Textu</u>	re	Remarks
0-14	10YR 4/3	98	<u>10Y</u>	R 5/8	2	<u>D</u>	<u>M</u>	sandy	loam	
		_	_		_					
					_					
					_					
		_								
·					-					
	oncentration, D=De						ed Sand Gr			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	all LRR	s, unless othe	rwise not	ed.)		lı	ndicato	ors for Problematic Hydric Soils ³ :
☐ Histosol	. ,			Sandy Redox (S	S5)					n Muck (A10)
-	ipedon (A2)			Stripped Matrix	. ,					Parent Material (TF2)
☐ Black His	, ,			Loamy Mucky N			MLRA 1)			Shallow Dark Surface (TF12)
	n Sulfide (A4)			Loamy Gleyed I		()		L	_l Oth∈	er (Explain in Remarks)
-	Below Dark Surfa	ce (A11)		Depleted Matrix	. ,			31		one of boundary bouting constating and
	rk Surface (A12) ucky Mineral (S1)		_	Redox Dark Sui	` '	-7\		۲		ors of hydrophytic vegetation and
	leyed Matrix (S4)			Depleted Dark S Redox Depress	•	7)				and hydrology must be present, as disturbed or problematic.
	Layer (if present):		ш	Redux Depless	10115 (1-0)				unies	s disturbed of problematic.
Type:	Layer (ii present).									
, ,	ches):									Durana Na D
. `				-				Hyai	ric Soii	Present? Yes ☐ No ☒
Remarks: Lo	ts of cobble and ro	ocks								
HYDROLO	GY									
_	drology Indicator				,					
	cators (minimum of	one requ	ired; ch							ndary Indicators (2 or more required)
Surface \	, ,			☐ Water-Stai			xcept MLR	RA	∐ W	/ater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B	5)			_	4A, and 4B)
☐ Saturation	n (A3)			☐ Salt Crust	` '				□ D	rainage Patterns (B10)
☐ Water Mater Mat	arks (B1)			☐ Aquatic Inv		' '				ry-Season Water Table (C2)
☐ Sedimen	t Deposits (B2)			☐ Hydrogen	Sulfide O	dor (C1)			☐ S	aturation Visible on Aerial Imagery (C9)
☐ Drift Dep	osits (B3)			☐ Oxidized R	Rhizosphe	res along	Living Roo	ts (C3)	☐ G	eomorphic Position (D2)
☐ Algal Ma	t or Crust (B4)			☐ Presence of	of Reduce	ed Iron (C	4)		☐ S	hallow Aquitard (D3)
☐ Iron Dep	osits (B5)			☐ Recent Iro	n Reducti	on in Tille	d Soils (C6)	□ F ₂	AC-Neutral Test (D5)
☐ Surface	Soil Cracks (B6)			☐ Stunted or	Stressed	Plants (D	1) (LRR A))	☐ R	aised Ant Mounds (D6) (LRR A)
☐ Inundation	on Visible on Aeria	I Imagery	(B7)	☐ Other (Exp	lain in Re	marks)			☐ F	rost-Heave Hummocks (D7)
☐ Sparsely	Vegetated Concar	ve Surfac	e (B8)							
Field Obser	vations:									
Surface Wat	er Present?	Yes 🗌	No 🛛	Depth (inches	s):					
Water Table	Present?	Yes 🗌	No ⊠	Depth (inches						
Saturation P		Yes 🗌	No 🖾	Depth (inches			Wetl	and Hv	drolon	y Present? Yes □ No ⊠
(includes car	oillary fringe)							_		,
Describe Re	corded Data (strea	m gauge,	monito	ing well, aerial	photos, p	revious in	spections),	if availa	able:	
Remarks:										
İ										

Project/Site: Washington Cathedral	(City/Co	ounty: King		Sampling Date: 1/27/2016	
Applicant/Owner: BCA Redmond				State: WA	Sampling Point: TP-3	
Investigator(s): E.Davis			Section, T	ownship, Range: <u>26, 26N, 5</u>	5E	
Landform (hillslope, terrace, etc.): hillslope		Local	relief (concave	, convex, none): concave	Slope (%): <u>2-6</u>	;
Subregion (LRR): A	Lat: <u>47.70</u>	9292		Long: <u>122.129664</u>	Datum: NAVD88	8
Soil Map Unit Name: Kitsap				NWI classificat	tion: PEM	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	r? Yes	s⊠ No 🗆 (If no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sign	nificantly dist	urbed?	? Are "N	ormal Circumstances" pres	ent? Yes ⊠ No □	
Are Vegetation, Soil, or Hydrology natu				led, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samp	oling point	ocations, transects,	important features,	etc.
Hydrophytic Vegetation Present? Yes ⊠ No □		١.	l- 11- 01-	1.4		
Hydric Soil Present? Yes ⊠ No □			ls the Sampled within a Wetla		<u>, П</u>	
Wetland Hydrology Present? Yes ⊠ No □			witiiiii a vvetia	iid: Tes 🖂 Tid	, L	
Remarks: Wetland is located between the base of a hillslo	pe and a pa	rking lo	ot curb.			
VEGETATION – Use scientific names of plan	ts.					
			nant Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size:) 1			ies? Status	Number of Dominant Sports That Are OBL, FACW, or	ecies r FAC: <u>5</u> (A))
2				Total Number of Domina	ınt	
3				Species Across All Strata	a: <u>3</u> (B)	
4				Percent of Dominant Spe That Are OBL, FACW, or	ecies r FAC: <u>60</u> (A/E	B)
1				Prevalence Index work	sheet:	
2				Total % Cover of:	Multiply by:	
3.					x 1 =	
4				FACW species	x 2 =	
5				FAC species	x 3 =	
Hark Otratura (Distrains 51)		= Tot	al Cover		x 4 =	
Herb Stratum (Plot size: 5') 1. Festuca arundinacea	60	V	<u>FAC</u>		x 5 =	
2. Moss sp.				Column Totals:	(A) (E	B)
Phalaris arundinacea				Prevalence Index	= B/A =	
4. Ranunculus repens				Hydrophytic Vegetation	n Indicators:	
5. Juncus effusus	7	N	FACW	☐ Rapid Test for Hydro	phytic Vegetation	
6				□ Dominance Test is >	50%	
7				Prevalence Index is:		
8					ations ¹ (Provide supporting or on a separate sheet)	
9				☐ Wetland Non-Vascul	. ,	
10				☐ Problematic Hydroph	nytic Vegetation¹ (Explain)	
11					and wetland hydrology mus	t
Woody Vine Stratum (Plot size:)	147	= 100	ai Cover	be present, unless distur	bed or problematic.	
1				Hydrophytic		
2				Vegetation	N N .	
% Bare Ground in Herb Stratum		= Tot	al Cover	Present? Yes	⊠ No □	
Remarks:				I		
1						

Color (moist)	Depth	Matrix			Redo	x Feature	<u>s</u>				e of indicators.)
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.	(inches) Co	olor (moist)	%	Color	(moist)	%	Type ¹	Loc ²	Textu	re	<u>Remarks</u>
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soil Indicators for Muck (A10) Ind	<u>)-14 10</u>	YR 3/2	95	7.5YR	R 5/8	5	D	M	silt loa	ım	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Sol Histic Epipedon (A2) Sardy Redox (S5) 2 cm Muck (A10) Sardy Redox (S5) 2 cm Muck (A10) Sardy Redox (S5) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Other (Expl											
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Histic Epipedon (A2)											9.
Histic Epipedon (A2)	-						,] 2 cn	n Muck (A10)
Hydrogen Sulfide (A4)	, ,								_		,
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Redox Dark Surface (F6) 3Indicators of hydrophytic vegetation are wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) Unless disturbed or problematic. Restrictive Layer (if present):				☐ Lo	oamy Mucky M	lineral (F) (excep	MLRA 1)] Very	y Shallow Dark Surface (TF12)
☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) 3Indicators of hydrophytic vegetation ar wetland hydrology must be present, wetland hydrology must be present. ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type:	ີ Hydrogen Sເ	ulfide (A4)		☐ Lo	oamy Gleyed N	Matrix (F2)			Othe	er (Explain in Remarks)
Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depleted Dark Surface (F8) Hydric Soil Present? Yes ☑ No □ APDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required; check all that apply) ☑ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA □ Ay, and 4B) 4A, and 4B) 1, 2,			e (A11)		•	. ,					
Sandy Gleyed Matrix (S4)				_		, ,			3		
Remarks: Trace of Gley 1 at 11 inches Hydric Soil Present? Yes No				_	•	,	7)				
Type:				∐ R	edox Depressi	ions (F8)			1	unles	ss disturbed or problematic.
Remarks: Trace of Gley 1 at 11 inches AyDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLR A4, and 4B) Drainage Patterns (B10) Drainage Patterns (B10)	_										
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### Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Mater Stained Leaves (B9) (MLf 4A, and 4B) Water Stained Leaves (B9) (MLf 4A, and 4B) Water Stained Leaves (B9) (MLf 4A, and 4B) Water Stained Leaves (B9) (MLf 4A, and 4B) Path apply (B10) Mater Stained Leaves (B9) (MLf 4A, and 4B) Water Stained L	Deptil (illiches	5)							Hydi	ric Soil	I Present? Yes ⊠ No ∐
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required; check all that apply) Water-Stained Leaves (B9) (except MLRA High Water Table (A2) Saturation (A3) Salt Crust (B11) Aquatic Invertebrates (B13) Drift Deposits (B2) Hydrogen Sulfide Odor (C1) Sediment Deposits (B3) Drift Deposits (B3) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Surface Soil Cracks (B8) Drift Deposits (B3) Depth (inches): 21 Water Table Present? Yes No Depth (inches): 1.5 Saturation Present? Yes No Depth (inches): 1.5 Saturation Present? Yes No Depth (inches): 1.5 No Depth (inch											
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High Water Table (A2)		•	ono roquii			•	es (B9) (e	xcent MI F	 ?Δ		· · · · · · · · · · · · · · · · · · ·
Saturation (A3) □ Salt Crust (B11) □ Drainage Patterns (B10) □ Water Marks (B1) □ Aquatic Invertebrates (B13) □ Dry-Season Water Table (C2) □ Sediment Deposits (B2) □ Hydrogen Sulfide Odor (C1) ☑ Saturation Visible on Aerial Image □ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) ☑ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) ☑ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ☑ No □ Depth (inches): ~1 Water Table Present? Yes ☑ No □ Depth (inches): 1.5 Saturation Present? Yes ☑ No □ Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes ☑ No □		` ,						xoopt iii_i	., .	_ ··	
□ Water Marks (B1) □ Aquatic Invertebrates (B13) □ Dry-Season Water Table (C2) □ Sediment Deposits (B2) □ Hydrogen Sulfide Odor (C1) □ Saturation Visible on Aerial Image □ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) □ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No □ Depth (inches): ~1 Water Table Present? Yes □ No □ Depth (inches): 1.5 Saturation Present? Yes □ No □ Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes □ No □	-			Г		•	,			Πр	
□ Sediment Deposits (B2) □ Hydrogen Sulfide Odor (C1) ☑ Saturation Visible on Aerial Image □ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) ☑ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ☑ No □ Depth (inches): 1.5 Water Table Present? Yes ☑ No □ Depth (inches): 1.5 Saturation Present? Yes ☑ No □ Depth (inches): 1.5 Wetland Hydrology Present? Yes ☑ No □ (includes capillary fringe)	`	•		_		` '	s (B13)				• ,
□ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) ☒ Geomorphic Position (D2) □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ☒ No □ Depth (inches): ~1 Water Table Present? Yes ☒ No □ Depth (inches): 1.5 Saturation Present? Yes ☒ No □ Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes ☒ No □ Concaverage (includes capillary fringe)		` ,			•		. ,				
□ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No □ Depth (inches): ~1 □ Vestant Present? Yes □ No □ Depth (inches): 1.5 □ Vestant Present? Yes □ No □ De								Livina Roo	ts (C3)		
□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC-Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No □ Depth (inches): ~1 □ Vestand Hydrology Present? Yes □ No □ Depth (inches): 1.5 □ Vestand Hydrology Present? Yes □ No □ Depth (inches): 1.5 □ Vestand Hydrology Present? Yes □ No □ Concludes capillary fringe)							_	_	(()		, , ,
□ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No □ Depth (inches): ~1 Water Table Present? Yes □ No □ Depth (inches): 1.5 Saturation Present? Yes □ No □ Depth (inches): to surface Wetland Hydrology Present? Yes □ No □ (includes capillary fringe)	_			-					()		. ,
☑ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7) ☐ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): ~1 Water Table Present? Yes ☒ No ☐ Depth (inches): 1.5 Saturation Present? Yes ☒ No ☐ Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes ☒ No ☐								`	,		
Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes ⋈ No □ Depth (inches): ~1 Water Table Present? Yes ⋈ No □ Depth (inches): 1.5 Saturation Present? Yes ⋈ No □ Depth (inches): to surface Wetland Hydrology Present? Yes ⋈ No □ Cincludes capillary fringe) Wetland Hydrology Present? Yes ⋈ No □ Concludes Surface Wetland Hydrology Present?		, ,	Imagery (E	_				, , , ,			
Field Observations: Surface Water Present? Yes \(\text{No} \) Depth (inches): \(\frac{-1}{2} \) Water Table Present? Yes \(\text{No} \) Depth (inches): \(\frac{1.5}{2} \) Saturation Present? Yes \(\text{No} \) Depth (inches): \(\text{to surface} \) (includes capillary fringe) Wetland Hydrology Present? Yes \(\text{No} \) \(\text{No} \)					· · · · · · ·		,				,
Water Table Present? Yes ☒ No ☐ Depth (inches): 1.5 Saturation Present? Yes ☒ No ☐ Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes ☒ No ☐	ield Observati	ons:									
Saturation Present? Yes No Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes No Depth (inches): No Depth (inc	Surface Water P	resent?	Yes ⊠ N	No 🔲	Depth (inches	s): <u>~1</u>					
Saturation Present? Yes No Depth (inches): to surface (includes capillary fringe) Wetland Hydrology Present? Yes No Depth (inches): No Depth (inc	Vater Table Pre					,	_ _				
(includes capillary fringe)							ice	Wetl	and Hv	drolog	ıv Present? Yes ⊠ No □
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	includes capillar	ry fringe)			• •		·			_	,,
	escribe Record	ded Data (strean	n gauge, r	nonitorir	ng well, aerial _l	photos, pi	evious in	spections),	if availa	able:	
Remarks: Wetland is located between a hillslope and the curb of a parking lot to the east and a walkway to the north. Heavy rain 2-3 days p investigation.		nd is located bet	tween a hi	illslope a	and the curb of	f a parkinç	g lot to the	e east and a	a walkw	ay to th	he north. Heavy rain 2-3 days prior to

Project/Site: Washington Cathedral		City/Co	ounty: <u>k</u>	King		Sampling Date: 1/2	27/2016
Applicant/Owner: BCA Redmond					State: WA	Sampling Point: <u>T</u>	P4
Investigator(s): E. Davis			Se	ection, To	wnship, Range: <u>26, 26N, </u>	5E	
Landform (hillslope, terrace, etc.): hillslope		Local	relief (concave,	convex, none): convex	Slope	e (%): <u>2-6</u>
Subregion (LRR): A	Lat: <u>47.70</u>	09292			Long: <u>122.129664</u>	Datum:	: NAVD88
Soil Map Unit Name: Kitsap					NWI classifica	tion: NA	
Are climatic / hydrologic conditions on the site typical for th	is time of yea	ır? Ye	s 🛛 🗆	No □ (If	no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sig	nificantly dist	turbed'	?	Are "No	ormal Circumstances" pres	ent? Yes 🛛 No	,
Are Vegetation, Soil, or Hydrology nat					ed, explain any answers in		
SUMMARY OF FINDINGS – Attach site map							tures, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □			la tha G	Sampled	Aron		
Hydric Soil Present? Yes ☐ No ☒				a Wetlan		0 🕅	
Wetland Hydrology Present? Yes ☐ No ☒			***************************************	u Wellan	100 🗀 14	<u> </u>	
Remarks: TP taken upslope							
VEGETATION – Use scientific names of plan	nte						
VEGETATION 636 3616116116 Harries of plan	Absolute	Domii	nant In	ndicator	Dominance Test works	sheet:	
Tree Stratum (Plot size:) 1	% Cover	Spec	ies?	<u>Status</u>	Number of Dominant Sp That Are OBL, FACW, o	ecies	(A)
2					Total Number of Domina	ant	
3					Species Across All Strat		(B)
4					Percent of Dominant Sp	ecies	
Sapling/Shrub Stratum (Plot size: 5')		= To	tal Cov	er	That Are OBL, FACW, o		(A/B)
1. Alnus rubra	10	Υ	F	AC	Prevalence Index work	sheet:	
2.					Total % Cover of:	Multiply I	by:
3					OBL species	x 1 =	
4					FACW species	x 2 =	
5					FAC species		
Herb Stratum (Plot size: 5')	10	= To	tal Cov	er	FACU species		
1. Festuca arundinacea	80	Υ	F	AC	UPL species		
Ranunculus repens				AC	Column Totals:	(A)	(B)
3. Phalaris arundinacea				ACW	Prevalence Index	= B/A =	<u>—</u>
4. Agrostis sp	5	N	F	AC	Hydrophytic Vegetation	n Indicators:	
5					☐ Rapid Test for Hydro		
6					□ Dominance Test is > □		
7					☐ Prevalence Index is		
8					☐ Morphological Adapt data in Remarks	tations† (Provide su or on a separate sl	
9					☐ Wetland Non-Vascul	ar Plants ¹	,
10					☐ Problematic Hydroph	nytic Vegetation1 (E	Explain)
11	100				¹ Indicators of hydric soil		
Woody Vine Stratum (Plot size:)	100	_ 10	tai Oov	Ci	be present, unless distu	bed or problemation	<i>;</i> .
1					Hydrophytic		
2					Vegetation		
% Bare Ground in Herb Stratum		= To	tal Cov	er	Present? Yes	No 🗌	
% Bare Ground in Herb Stratum Remarks:					<u> </u>		

Profile Desc	ription: (Describ	e to the o	depth n			dicator	or confirn	n the ab	sence	e of indicators.)
Depth	Matrix				x Features			_		
(inches)	Color (moist)	%	Cold	or (moist)	<u>%</u>	Type ¹	Loc ²	<u>Textu</u>	re	Remarks
0-14	10YR 4/3	100						silt loa	m	
·										
·	-							-		
·										
	oncentration, D=De						ed Sand G			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	all LRR	s, unless other	wise noted	l.)		lı	ndicate	ors for Problematic Hydric Soils ³ :
☐ Histosol				Sandy Redox (S					_	n Muck (A10)
-	ipedon (A2)			Stripped Matrix	. ,					Parent Material (TF2)
☐ Black His	, ,			Loamy Mucky M		except	MLRA 1)			y Shallow Dark Surface (TF12)
	n Sulfide (A4)	(8.4.4)		Loamy Gleyed N				L	_ Oth	er (Explain in Remarks)
	Below Dark Surfa rk Surface (A12)	ce (A11)		Depleted Matrix Redox Dark Sur	` '			31	n di not	ors of hydrophytic vegetation and
	ucky Mineral (S1)			Depleted Dark Sur	` '			-1		and hydrology must be present,
	leyed Matrix (S4)			Redox Depressi	. ,					ss disturbed or problematic.
	_ayer (if present):			redex Depressi	0113 (1 0)			T	unio	of distarbed of problematic.
Type:										
, ,	ches):							Llvd	ic Sai	l Present? Yes □ No ⊠
. `				-				пуш	10 301	Fresent? Tes No
Remarks: Lo	ts of cobble and ro	CKS								
HYDROLO	GY									
	drology Indicator	2.								
_	cators (minimum of		iirod: ch	ock all that anal	w)				8000	ndary Indicators (2 or more required)
Surface	-	one requ	illeu, ch			(DO) (a)	raamt MI F			
_	` '			☐ Water-Stai		(D9) (e	ccept wilr	KA	□ ٧	Vater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B)					4A, and 4B)
☐ Saturation	, ,			☐ Salt Crust	,	D40\				rainage Patterns (B10)
☐ Water Mater Mat	` ,				rertebrates (,				ry-Season Water Table (C2)
	t Deposits (B2)				Sulfide Odor			. (00)	_	aturation Visible on Aerial Imagery (C9)
	osits (B3)				hizospheres	_	_	ts (C3)		Geomorphic Position (D2)
_	t or Crust (B4)				of Reduced I					hallow Aquitard (D3)
	osits (B5)			_	Reduction		`	,		AC-Neutral Test (D5)
	Soil Cracks (B6)		(DZ)		Stressed Pla		I) (LKK A)			aised Ant Mounds (D6) (LRR A)
	on Visible on Aerial			☐ Other (Exp	lain in Rema	arks)			ШЬ	rost-Heave Hummocks (D7)
	Vegetated Concar	/e Surrac	e (B8)							
Field Obser										
Surface Wat		Yes 🗌	No 🛛	Depth (inches						
Water Table	Present?	Yes 🗌	No 🛛	Depth (inches	s):					
Saturation P		Yes 🗌	No 🛚	Depth (inches	s):		Wetl	and Hy	drolog	y Present? Yes □ No ⊠
(includes car	oillary fringe) corded Data (strea	m dalide	monitor	ring well serial	nhotos prev	ious inc	nections)	if avails	able.	
Positive IVE	ondod Data (silea	gauge	,	g won, aenai	onotos, piev	1000 1113	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	uvalic		
Degrand										
Remarks:										

Project/Site: Washington Cathedral	(City/Co	unty: <u>King</u>		Sampling Date: 1/27/20	016
Applicant/Owner: BCA Redmond				State: WA	Sampling Point: TP5	
Investigator(s): E.Davis			Section, To	ownship, Range: <u>26, 26N, 5</u>	5E	
Landform (hillslope, terrace, etc.): hillslope		Local	relief (concave	, convex, none): concave	Slope (%)	: <u>2-6</u>
Subregion (LRR): A	_ Lat: <u>47.70</u>	9292		Long: <u>122.129664</u>	Datum: NA\	/D88
Soil Map Unit Name: Kitsap				NWI classificat	tion: PEM	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	r? Yes	S⊠ No □ (I	f no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sign	nificantly dist	urbed?	Are "No	ormal Circumstances" pres	ent? Yes ⊠ No □	
Are Vegetation, Soil, or Hydrology natu	rally problen	natic?	(If need	ed, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samp	ling point l	ocations, transects,	important feature	es, etc.
Hydrophytic Vegetation Present? Yes ☒ No ☐			- 41 - 0 1 - 1			
Hydric Soil Present? Yes ⊠ No □			s the Sampled vithin a Wetlar		о П	
Wetland Hydrology Present? Yes ⊠ No □			vitiliii a vvetiai	id: Tes 🖂 No	, L	
Remarks: TP was taken at base of slope on east side.						
VEGETATION – Use scientific names of plan	ts.					
			ant Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size:) 1			es? Status	Number of Dominant Spart Are OBL, FACW, or		(A)
2				Total Number of Domina	ınt	
3				Species Across All Strata	a: <u>4</u>	(B)
4				Percent of Dominant Spe That Are OBL, FACW, or		(A/B)
Sapling/Shrub Stratum (Plot size:) 1				Prevalence Index work	sheet:	
2.					Multiply by:	
3.				OBL species		
4				FACW species	x 2 =	_
5				FAC species	x 3 =	_
W 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		= Tota	al Cover	FACU species		
Herb Stratum (Plot size: 5')	75	V	FAC	UPL species		
Festuca arundinacea Ranunculus repens				Column Totals:	(A)	(B)
3. Juncus effusus				Prevalence Index	= B/A =	
4. Moss sp.				Hydrophytic Vegetation	n Indicators:	
5. Pharlaris arundinacea				☐ Rapid Test for Hydro	phytic Vegetation	
6					·50%	
7				☐ Prevalence Index is:	≤3.0 ¹	
8				☐ Morphological Adapt data in Remarks	tations ¹ (Provide suppor or on a separate sheet)	
9				☐ Wetland Non-Vascul	ar Plants ¹	
10				☐ Problematic Hydroph	nytic Vegetation¹ (Expla	in)
11	160			¹ Indicators of hydric soil		must
Woody Vine Stratum (Plot size:)	100	_ 100	ai Covei	be present, unless distur	bed or problematic.	
1				Hydrophytic		
2				Vegetation	No C	
% Bare Ground in Herb Stratum		= Tota	al Cover	Present? Yes	No 🗌	
Remarks:						

Depth (inches)	Matrix Color (moist)	%	Color (n	Redox noist)	%	_Type ¹	Loc ²	_Texture	<u> </u>		Remarks	<u> </u>
	7.5YR 3/1			1/8								<u>-</u>
<u>0-14 </u>	7.511(5/1	00	7.5110	70	12		IVI	Silt loan				
			-									
			_									
					-							
								-				
			_									
¹ Type: C=Con	ncentration, D=De	epletion, R	M=Reduce	ed Matrix, CS	=Covered	d or Coat	ed Sand G	rains.	² Locat	tion: PL=	Pore Lining	g, M=Matrix.
Hydric Soil In	dicators: (Appl	icable to	all LRRs, ι	ınless other	wise not	ed.)		Inc	licators	for Prob	lematic H	ydric Soils³:
☐ Histosol (A	\1)		☐ San	dy Redox (S	5)				2 cm N	luck (A10))	
☐ Histic Epip	edon (A2)		☐ Strip	oped Matrix ((S6)				Red Pa	arent Mat	erial (TF2)	
☐ Black Histi	, ,			my Mucky M			t MLRA 1)		•		ark Surface	` ,
	Sulfide (A4)			my Gleyed M)			Other ((Explain ir	n Remarks)
	Below Dark Surfa	ce (A11)		leted Matrix	. ,			2.				
	Surface (A12)			lox Dark Surf	, ,	7)					-	etation and
•	cky Mineral (S1) eyed Matrix (S4)			leted Dark S lox Depression	,	7)					y must be or problem	•
•	ayer (if present):			iox Depiessic	0113 (1 0)				uilless	uistuibeu	or problem	latic.
	ayer (ii present).											
,,	nes):							Lludeia	Soil D	rocont?	Yes ⊠	No 🗆
-1 . (- ,							Пушп	JOHE	16261111	i es 🖂	NO 🗀
Remarks:								1				
	BY											
HYDROLOG		s:										
HYDROLOG Wetland Hydr	rology Indicators		red: check	all that apply	<i>(</i>)					arv Indica	itors (2 or r	nore required)
HYDROLOG Wetland Hydr Primary Indica	rology Indicators stors (minimum of					es (B9) (e	except MLI		Seconda	-		more required)
HYDROLOG Wetland Hydr Primary Indica Surface W	rology Indicators stors (minimum of ater (A1)			Water-Stain	ned Leave	` , `	xcept MLI		Second:	er-Staine	d Leaves (more required) B9) (MLRA 1, 2
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate	rology Indicators stors (minimum of rater (A1) er Table (A2)			Water-Stain	ned Leave	` , `	xcept MLI	RA I	Seconda □ Wat	er-Stained	d Leaves (B9) (MLRA 1, 2
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation	rology Indicators stors (minimum of rater (A1) rater (A2) (A3)			Water-Stain 1, 2, 4A Salt Crust (ned Leave , and 4B B11))	xcept MLI	RA I	Seconda □ Wate	er-Stained 4A, and 4 nage Patt	d Leaves (I B) terns (B10)	B9) (MLRA 1, 2
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar	rology Indicators stors (minimum of fater (A1) or Table (A2) (A3) rks (B1)			Water-Stain 1, 2, 4A Salt Crust (I Aquatic Inventor)	ned Leave a, and 4B B11) ertebrates) s (B13)	xcept MLI	RA	Seconda Wate Drai Dry-	er-Stained 1A, and 4 nage Patt Season V	d Leaves (I B) terns (B10) Vater Table	B9) (MLRA 1, 2) e (C2)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I	rology Indicators stors (minimum of fater (A1) er Table (A2) (A3) rks (B1) Deposits (B2)			Water-Stain 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S	ned Leave a, and 4B B11) ertebrates Sulfide Oc	s (B13) dor (C1)		RA	Second: □ Wate □ Drai □ Dry- □ Satu	er-Stained 4A, and 4 nage Patt Season V uration Vis	d Leaves (lab) terns (B10) Vater Table sible on Ae	B9) (MLRA 1, 2) e (C2) erial Imagery (C
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos	rology Indicators tors (minimum of dater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3)			Water-Stair 1, 2, 4A Salt Crust (I Aquatic Invo Hydrogen S Oxidized Rh	ned Leave A, and 4B B11) ertebrates Sulfide Och hizospher	s (B13) dor (C1) res along	Living Roc	RA	Second: Wate Drai Dry- Satu Geo	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F	d Leaves (I B) terns (B10) Vater Table sible on Ae Position (D	B9) (MLRA 1, 2) e (C2) erial Imagery (C
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos	rology Indicators tors (minimum of ater (A1) Table (A2) (A3) Ks (B1) Deposits (B2) sits (B3) or Crust (B4)			Water-Stair 1, 2, 4A Salt Crust (I Aquatic Invo Hydrogen S Oxidized RI Presence o	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce	s (B13) dor (C1) res along d Iron (C	Living Roo 4)	RA	Seconda Wate Drai Dry- Satu Geo Shal	er-Stained 4A, and 4 nage Patt Season V Iration Vis morphic F Ilow Aquit	d Leaves (I LEN) terns (B10) Vater Table Sible on Ae Position (D card (D3)	B9) (MLRA 1, 2) e (C2) erial Imagery (C
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos	rology Indicators stors (minimum of later (A1) r Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)			Water-Stair 1, 2, 4A Salt Crust (I Aquatic Invo Hydrogen S Oxidized Rt Presence o Recent Iron	ned Leave a, and 4B B11) ertebrates Sulfide Oc hizospher f Reduce a Reduction	s (B13) dor (C1) res along d Iron (Co	Living Roc 4) d Soils (C6	RA	Seconda Wate Drai Dry- Satu Geo Shal	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F llow Aquit	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5)	B9) (MLRA 1, 2) e (C2) erial Imagery (C
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So	rology Indicators tors (minimum of ater (A1) Table (A2) (A3) Ks (B1) Deposits (B2) sits (B3) or Crust (B4)	one requi		Water-Stair 1, 2, 4A Salt Crust (I Aquatic Invo Hydrogen S Oxidized RI Presence o	ned Leave a, and 4B B11) ertebrates Sulfide Oc hizospher f Reduce n Reduction	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	RA	Seconda Wate Drai Dry- Satu Geo Shal FAC	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F Ilow Aquit -Neutral - sed Ant M	d Leaves (I LEN) terns (B10) Vater Table Sible on Ae Position (D card (D3)	B9) (MLRA 1, 2) e (C2) erial Imagery (Ci 22)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation	rology Indicators stors (minimum of stater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	one requi	(B7)	Water-Stain 1, 2, 4A Salt Crust (I Aquatic Invelopment Hydrogen S Oxidized RI Presence of Recent Iron Stunted or S	ned Leave a, and 4B B11) ertebrates Sulfide Oc hizospher f Reduce n Reduction	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	RA	Seconda Wate Drai Dry- Satu Geo Shal FAC	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F Ilow Aquit -Neutral - sed Ant M	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D eard (D3) Test (D5) ounds (D6	B9) (MLRA 1, 2) e (C2) erial Imagery (Ci 22)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation	rology Indicators stors (minimum of fater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial fegetated Concav	one requi	(B7)	Water-Stain 1, 2, 4A Salt Crust (I Aquatic Invelopment Hydrogen S Oxidized RI Presence of Recent Iron Stunted or S	ned Leave a, and 4B B11) ertebrates Sulfide Oc hizospher f Reduce n Reduction	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	RA	Seconda Wate Drai Dry- Satu Geo Shal FAC	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F Ilow Aquit -Neutral - sed Ant M	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D eard (D3) Test (D5) ounds (D6	B9) (MLRA 1, 2) e (C2) erial Imagery (Ci 22)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V	rology Indicators tors (minimum of ater (A1) r Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) bil Cracks (B6) a Visible on Aerial /egetated Concavations:	Imagery over Surface		Water-Stain 1, 2, 4A Salt Crust (I Aquatic Invelopment Hydrogen S Oxidized RI Presence of Recent Iron Stunted or S	ned Leave a, and 4B B11) ertebrates Sulfide Oc hizospher f Reduce a Reductio Stressed lain in Re	s (B13) dor (C1) res along d Iron (Con on in Tille Plants (Donarks)	Living Roc 4) d Soils (C6	RA	Seconda Wate Drai Dry- Satu Geo Shal FAC	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F Ilow Aquit -Neutral - sed Ant M	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D eard (D3) Test (D5) ounds (D6	B9) (MLRA 1, 2) e (C2) erial Imagery (Ci 22)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Field Observa	rology Indicators stors (minimum of stater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) o Visible on Aerial strength (regetated Concavations: r Present?	Imagery (ve Surface	(B7) D	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce n Reductio Stressed lain in Ref	s (B13) dor (C1) res along d Iron (Con on in Tille Plants (Donarks)	Living Roc 4) d Soils (C6	RA	Seconda Wate Drai Dry- Satu Geo Shal FAC	er-Stained 4A, and 4 nage Patt Season V uration Vis morphic F Ilow Aquit -Neutral - sed Ant M	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D eard (D3) Test (D5) ounds (D6	B9) (MLRA 1, 2) e (C2) erial Imagery (Ci 22)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Field Observa Water Table P	rology Indicators stors (minimum of later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) of Visible on Aerial legetated Concavations: or Present?	Imagery (ve Surface) Yes Yes Yes	(B7)	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Invo Hydrogen S Oxidized Ri Presence o Recent Iron Stunted or S Other (Expl	ned Leave a, and 4B B11) ertebrates Sulfide Oc hizospher of Reduce n Reductio Stressed lain in Reduction (Stressed)	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roo 4) d Soils (C6 1) (LRR A	RA	Seconda Wate Drai Dry- Satu Geo Shai FAC Rais	er-Stained 4A, and 4 nage Pati Season V uration Vis morphic I llow Aquit -Neutral ed Ant M st-Heave I	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6) Hummocks	B9) (MLRA 1, 2) e (C2) erial Imagery (C2) 2) (LRR A) s (D7)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Iron Depos Surface So Inundation Sparsely V Field Observa Surface Water Water Table P Saturation Pre (includes capil	rology Indicators stors (minimum of stater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial stepetated Concavations: er Present? ersent? elsent?	Imagery (ve Surface) Yes Yes Yes Yes Yes Yes	(B7)	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl epth (inches) epth (inches)	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce n Reductio Stressed lain in Ref b: at surfa b: 4 b: to surfa	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	RA	Seconda Wate Drai Dry- Satu Geo Rais FAC Fros	er-Stained 4A, and 4 nage Pati Season V uration Vis morphic I llow Aquit -Neutral ed Ant M st-Heave I	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6) Hummocks	B9) (MLRA 1, 2) e (C2) erial Imagery (Ci 22)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Iron Depos Surface So Inundation Sparsely V Field Observa Surface Water Water Table P Saturation Pre (includes capil	rology Indicators stors (minimum of stater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial stepetated Concavations: er Present? ersent?	Imagery (ve Surface) Yes Yes Yes Yes Yes Yes	(B7)	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl epth (inches) epth (inches)	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce n Reductio Stressed lain in Ref b: at surfa b: 4 b: to surfa	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	RA	Seconda Wate Drai Dry- Satu Geo Rais FAC Fros	er-Stained 4A, and 4 nage Pati Season V uration Vis morphic I llow Aquit -Neutral ed Ant M st-Heave I	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6) Hummocks	B9) (MLRA 1, 2) e (C2) erial Imagery (C2) 2) (LRR A) s (D7)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Iron Depos Surface So Inundation Sparsely V Field Observa Surface Water Water Table P Saturation Pre (includes capil	rology Indicators stors (minimum of stater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial stepetated Concavations: er Present? ersent? elsent?	Imagery (ve Surface) Yes Yes Yes Yes Yes Yes	(B7)	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl epth (inches) epth (inches)	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce n Reductio Stressed lain in Ref b: at surfa b: 4 b: to surfa	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	RA	Seconda Wate Drai Dry- Satu Geo Rais FAC Fros	er-Stained 4A, and 4 nage Pati Season V uration Vis morphic I llow Aquit -Neutral ed Ant M st-Heave I	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6) Hummocks	B9) (MLRA 1, 2) e (C2) erial Imagery (C2) 2) (LRR A) s (D7)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Iron Depos Surface So Inundation Sparsely V Field Observa Surface Water Water Table P Saturation Pre (includes capil	rology Indicators stors (minimum of stater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial stepetated Concavations: er Present? ersent? elsent?	Imagery (ve Surface) Yes Yes Yes Yes Yes Yes	(B7)	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl epth (inches) epth (inches)	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce n Reductio Stressed lain in Ref b: at surfa b: 4 b: to surfa	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	RA	Seconda Wate Drai Dry- Satu Geo Rais FAC Fros	er-Stained 4A, and 4 nage Pati Season V uration Vis morphic I llow Aquit -Neutral ed Ant M st-Heave I	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6) Hummocks	B9) (MLRA 1, 2) e (C2) erial Imagery (C2) 2) (LRR A) s (D7)
HYDROLOG Wetland Hydr Primary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Field Observa Surface Water Water Table P Saturation Pre (includes capill Describe Reco	rology Indicators stors (minimum of stater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial stepetated Concavations: er Present? ersent? elsent?	Imagery (ve Surface) Yes Yes Yes Yes Yes Yes	(B7)	Water-Stair 1, 2, 4A Salt Crust (I Aquatic Inve Hydrogen S Oxidized RI Presence o Recent Iron Stunted or S Other (Expl epth (inches) epth (inches)	ned Leave a, and 4B B11) ertebrates Sulfide Ochizospher f Reduce n Reductio Stressed lain in Ref b: at surfa b: 4 b: to surfa	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	RA	Seconda Wate Drai Dry- Satu Geo Rais FAC Fros	er-Stained 4A, and 4 nage Pati Season V uration Vis morphic I llow Aquit -Neutral ed Ant M st-Heave I	d Leaves (I IB) terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6) Hummocks	B9) (MLRA 1, 2) e (C2) erial Imagery (C2) 2) (LRR A) s (D7)

Project/Site: Washington Cathedral		City/C	ounty	r: King		Sampling Date: 1/27/2	2016
Applicant/Owner: BCA Redmond					State: WA	Sampling Point: TP6	
Investigator(s): E. Davis				Section, To	ownship, Range: <u>26, 26N, </u>	5E	
Landform (hillslope, terrace, etc.): hillslope		Loca	l relie	f (concave,	convex, none): convex	Slope (%	6): <u>2-6</u>
Subregion (LRR): A	_ Lat: 47.70	09292			Long: <u>122.129664</u>	Datum: <u>N/</u>	AVD88
Soil Map Unit Name: Kitsap							
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Ye	es 🛛	No ☐ (I	f no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sign	nificantly dis	turbec	!?	Are "No	ormal Circumstances" pres	sent? Yes ⊠ No □	
Are Vegetation, Soil, or Hydrology natu				(If neede	ed, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	sam	plin	g point l	ocations, transects,	important featur	es, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □							
Hydric Soil Present? Yes ☐ No ☒				e Sampled	_	- 57	
Wetland Hydrology Present? Yes ☐ No ☒			with	in a Wetlar	nd? Yes □ N	5 <u>N</u>	
Remarks: TP taken upslope on the east side		•					
VEGETATION – Use scientific names of plan	ts.						
	Absolute	Dom	inant	Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size:) 1	% Cover				Number of Dominant Sp That Are OBL, FACW, o		_ (A)
2					Total Number of Domina	ant	
3					Species Across All Strat		_ (B)
4					Percent of Dominant Sp	ecies	
Sapling/Shrub Stratum (Plot size:)		= To	otal C	over	That Are OBL, FACW, o	or FAC: 100	_ (A/B)
1					Prevalence Index work	sheet:	
2					Total % Cover of:	Multiply by:	
3					OBL species	x 1 =	
4					FACW species	x 2 =	
5					FAC species		
Harb Stratum (Plot aiza: 5')		= To	otal C	over	FACU species		
Herb Stratum (Plot size: 5') 1. moss sp.	80	V		FAC	UPL species		
Festuca arundinacea		Y	_		Column Totals:	(A)	(B)
Ranunculus repens					Prevalence Index	= B/A =	
4					Hydrophytic Vegetatio	n Indicators:	
5					☐ Rapid Test for Hydro	ophytic Vegetation	
6					□ Dominance Test is >	·50%	
7					☐ Prevalence Index is		
8					☐ Morphological Adapt	tations¹ (Provide suppo or on a separate shee	
9					☐ Wetland Non-Vascu	·	,,,
10					☐ Problematic Hydroph		ain)
11					¹Indicators of hydric soil	, , ,	,
Woody Vine Stratum (Plot size:)	<u>170</u>				be present, unless distu	rbed or problematic.	
1					Hydrophytic		
2					Vegetation Present? Yes	s⊠ No□	
% Bare Ground in Herb Stratum		= 10	otal C	over	riesentr fes		
Remarks:					1		

Profile Desc	ription: (Describ	e to the	depth ne	eeded to docur	nent the indicate	or or confirm	n the al	sence	e of indicators.)
Depth	Matrix				x Features		_		
(inches)	Color (moist)	%	Cold	or (moist)	% Type ¹	Loc ²	<u>Textu</u>	ire	<u>Remarks</u>
0-12	10YR 4/3	100			- ·		silt loa	ım	·
· 									· -
									· -
									<u></u>
· 									· -
									·
	oncentration, D=De					ated Sand G			ocation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to	all LRR	s, unless other	rwise noted.)		li	ndicat	ors for Problematic Hydric Soils ³ :
☐ Histosol				Sandy Redox (S			_		m Muck (A10)
	ipedon (A2)			Stripped Matrix					Parent Material (TF2)
☐ Black His	, ,				lineral (F1) (exce	pt MLRA 1)			y Shallow Dark Surface (TF12)
	n Sulfide (A4)	(8.4.4)		Loamy Gleyed N			L	_ Oth	er (Explain in Remarks)
	Below Dark Surfa	ce (A11)		Depleted Matrix Redox Dark Sur	, ,		31	امطاممه	ors of hydrophytic vegetation and
	rk Surface (A12) ucky Mineral (S1)		_	Depleted Dark Sur	` '		-1		and hydrology must be present,
	leyed Matrix (S4)			Redox Depressi	, ,				ss disturbed or problematic.
-	_ayer (if present):	<u> </u>		redox Depressi	10110 (1 0)		1	dillo	oo distarbed of problematic.
Type:									
,,	ches):						Llydi	ria Sai	I Present? Yes □ No ☒
. `				-			пуш	10 301	Triesent: Tes No
Remarks: rei	usal at 12 inches;	TOCKS							
HYDROLO	GY								
	drology Indicator	e•							
_	cators (minimum of		iirod: ch	ock all that appl	w)			8000	ondary Indicators (2 or more required)
Surface \	-	one requ	illeu, cir		•	/ a a a			
_	` '				ned Leaves (B9)	(except will	XA	Шν	Vater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B)				4A, and 4B)
☐ Saturatio	, ,			☐ Salt Crust	` '				Orainage Patterns (B10)
☐ Water Ma	,				vertebrates (B13)				Ory-Season Water Table (C2)
	t Deposits (B2)				Sulfide Odor (C1)		. (00)	_	Saturation Visible on Aerial Imagery (C9)
	osits (B3)				hizospheres alon		ots (C3)		Geomorphic Position (D2)
_	t or Crust (B4)				of Reduced Iron (.,		Shallow Aquitard (D3)
	osits (B5)				n Reduction in Til	,	,		AC-Neutral Test (D5)
	Soil Cracks (B6)		(DT)		Stressed Plants (D1) (LRR A)		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria			☐ Other (Exp	lain in Remarks)			Ш	rost-Heave Hummocks (D7)
	Vegetated Concar	ve Surrac	e (B8)						
Field Obser									
Surface Water		Yes 🗌	No 🛛		s):				
Water Table	Present?	Yes	No 🛛	Depth (inches	s):	.			
Saturation P		Yes 🗌	No 🛚	Depth (inches	s):	Wetl	land Hy	drolog	gy Present? Yes ☐ No ⊠
(includes cap	oillary fringe) corded Data (strea	m dalide	monitor	ring well serial	nhotos previous i	nspections)	if avails	aple.	
Positing IVE	ondod Dala (Silea	gauge	,	g won, aenai	priotos, provious i	opooliona),	n availe	ADIO.	
Dawrend									
Remarks:									
i									

Project/Site: Washington Cathedral	(City/C	county:	King		Sampling	Date: <u>2/2/201</u>	6
Applicant/Owner: BCA Redmond					State: WA	Sampling	Point: TP7	
Investigator(s): E.Davis			s	ection, To	wnship, Range: <u>26, 26N, 5</u>	5E		
Landform (hillslope, terrace, etc.): hillslope		Loca	al relief	(concave,	convex, none): concave		Slope (%)	: <u>1-3</u>
Subregion (LRR): A	Lat: <u>47.71</u>	0719)		Long: <u>122.130833</u>		Datum: NA\	/D88
Soil Map Unit Name: Bellingham								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	•			•	rmal Circumstances" prese	ent? Yes	s⊠ No □	
Are Vegetation, Soil, or Hydrology natu					d, explain any answers in			
SUMMARY OF FINDINGS – Attach site map								s, etc.
Hydrophytic Vegetation Present? Yes ☒ No ☐			la tha	Camandad	A			
Hydric Soil Present? Yes ⊠ No □				Sampled . a Wetlan				
Wetland Hydrology Present? Yes ⊠ No □			WILIIII	i a vvetiaii	u: 163 ⊠ 140			
Remarks: TP was taken at base of berm that surrounds we	etland							
VEGETATION – Use scientific names of plan	ts.							
	Absolute	Dom	inant I	ndicator	Dominance Test works	heet:		
Tree Stratum (Plot size:) 1	% Cover				Number of Dominant Spe That Are OBL, FACW, or		2	(A)
2					Total Number of Domina	nt		
3					Species Across All Strata	a: <u>2</u>	2	(B)
4					Percent of Dominant Spe That Are OBL, FACW, or		100	(A/B)
1				-	Prevalence Index works	sheet:		
2					Total % Cover of:		Multiply by:	
3					OBL species	x 1	=	_
4					FACW species	x 2	=	_
5					FAC species	x 3	=	_
Harb Otratura (Distrains 51)		= To	otal Co	ver	FACU species			
Herb Stratum (Plot size: 5') 1. Phalaris arundinacea	60	V		= A C\A/	UPL species			
Festuca arundinacea					Column Totals:	(A)		(B)
3					Prevalence Index :	= B/A = _		
4				F	Hydrophytic Vegetation	n Indicato	ors:	
5					☐ Rapid Test for Hydro	phytic Ve	getation	
6						50%		
7					☐ Prevalence Index is s	≤3.0¹		
8 9					☐ Morphological Adapta data in Remarks	or on a se		
10					☐ Wetland Non-Vascula			
11.					☐ Problematic Hydroph		, ,	,
Woody Vine Stratum (Plot size:)	100	= To	otal Co	ver	¹ Indicators of hydric soil a be present, unless distur			must
1					Hydrophytic			
2					Vegetation	-	_	
% Bare Ground in Herb Stratum		= To	otal Co	ver	Present? Yes	⊠ No l		
Remarks:								

Depth	Matrix				dox Featur				
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	<u>Texture</u>	e Remarks
<u>0-15</u>	10YR 2/1	80	<u>10YF</u>	R 5/6	20	<u>D</u>	<u>M</u>	silt loam	rocks in soils
			-						
							·		
17 0 .0		- Indian D	M D		20.0		- 1010		2) continue DI Describition M Matrix
	Concentration, D=D Indicators: (App						ed Sand G		² Location: PL=Pore Lining, M=Matrix. licators for Problematic Hydric Soils ³ :
☐ Histosol		ilcable to a				ieu.)			2 cm Muck (A10)
	pipedon (A2)			Sandy Redox Stripped Matri					,
	istic (A3)			_oamy Mucky	. ,	1) (excen	t MI RA 1)	_	Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			_oamy Gleyed					
	d Below Dark Surfa	ace (A11)		Depleted Matr		,		_	7
☐ Thick Da	ark Surface (A12)	, ,		Redox Dark S	, ,)		³ ln	dicators of hydrophytic vegetation and
☐ Sandy N	Mucky Mineral (S1)			Depleted Dark	Surface (=7)			wetland hydrology must be present,
	Gleyed Matrix (S4)		☐ F	Redox Depres	ssions (F8)				unless disturbed or problematic.
	Layer (if present)								
Depth (ir	nches):							Hydri	Soil Present? Yes ⊠ No □
HYDROLO	OGY								
		's:							
Wetland Hy	OGY ydrology Indicator		ired; che	eck all that ap	ply)				Secondary Indicators (2 or more required)
Wetland Hy Primary Indi	ydrology Indicator icators (minimum o		ired; che	-		ves (B9) (€	except MLF		· · · · · · · · · · · · · · · · · · ·
Wetland Hy Primary Indi Surface	ydrology Indicator icators (minimum o Water (A1)		ired; che	☐ Water-St	ained Leav		except MLF		☐ Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi	ydrology Indicator icators (minimum o Water (A1) ater Table (A2)		ired; che	☐ Water-St	ained Leav		except MLF	RA	· · · · · · · · · · · · · · · · · · ·
Wetland Hy Primary Indi Surface High Wa Saturati	ydrology Indicator icators (minimum o Water (A1) ater Table (A2) ion (A3)		ired; che	☐ Water-St 1, 2,	ained Leav 4A, and 4 E st (B11)	3)	except MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)□ Drainage Patterns (B10)
Wetland Hy Primary Ind Surface High Wa Saturati Water M	ydrology Indicator icators (minimum o Water (A1) ater Table (A2)		ired; che	☐ Water-St	ained Leaven AA, and 48 (B11) a	B) es (B13)	except MLF	RA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime	ydrology Indicator icators (minimum o Water (A1) ater Table (A2) ion (A3) Marks (B1)		ired; che	☐ Water-St 1, 2, 4 ☐ Salt Crus ☐ Aquatic II ☐ Hydroger	ained Leaven AA, and 4B (B11) anvertebrate Constitution Sulfide Constitu	es (B13) dor (C1)	except MLF	RA	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime	ydrology Indicator icators (minimum o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2)		ired; che	Water-St 1, 2, 4 Salt Crus Aquatic li Hydroger Oxidized	ained Leaven AA, and 4B (B11) anvertebrate Constitution Sulfide Constitu	es (B13) dor (C1) eres along	Living Roo	RA	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	ydrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3)		ired; che	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence	ained Leaver AA, and 4B at (B11) envertebrate De Sulfide Central Rhizosphere of Reduce	es (B13) dor (C1) eres along ed Iron (C	Living Roo	RA	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	ydrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		ired; che	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaver AA, and 4I of the test (B11) of the	es (B13) dor (C1) eres along ed Iron (C ion in Tille	Living Roo 4)	RA ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift De Algal Ma Iron Dep Surface	ydrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one requi		Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaver AA, and 4I of the test (B11) of the	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) ed Soils (C6	RA ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5)
Wetland Hy Primary Ind Surface High Wa Saturati Water M Sedimer Drift De Algal Ma Iron Dep Surface	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6)	f one requi	(B7)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaver 4A, and 4B at (B11) Invertebrate in Sulfide Con Rhizosphere of Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) ed Soils (C6	RA ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Ind Surface High Wa Saturati Water M Sedimer Drift De Algal Ma Iron Dep Surface	ydrology Indicator icators (minimum o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca	f one requi	(B7)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaver 4A, and 4B at (B11) Invertebrate in Sulfide Con Rhizosphere of Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) ed Soils (C6	RA ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsel	ydrology Indicator icators (minimum o Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca	f one requi	(B7)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir	ained Leaver AA, and 4I at (B11) envertebrate an Sulfide Con Reduction Reduction Stressed explain in Reduction Reduc	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) ed Soils (C6	RA ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsel	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca	f one requi	(B7) e (B8)	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted o	ained Leav 4A, and 4B at (B11) nvertebrate n Sulfide C Rhizosphe e of Reduct ron Reduct or Stressed xplain in Reduct	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D	Living Roo 4) ed Soils (C6	RA ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Ind Surface High Wa Saturati Water M Sedimer Algal Ma Iron Dep Surface Inundati Sparsel Field Obse Surface Wa Water Table Saturation F (includes ca	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ater Present? e Present? papillary fringe)	I Imagery (ve Surface Yes Yes Yes Yes Yes Yes	(B7) e (B8) No	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaver AA, and 4B at (B11) invertebrate in Sulfide Con Reduction Reduction Stressed explain in Reduction Stressed explai	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roo 4) ad Soils (C6 01) (LRR A)	ets (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hy Primary Ind Surface High Wa Saturati Water M Sedimer Algal Ma Iron Dep Surface Inundati Sparsel Field Obse Surface Wa Water Table Saturation F (includes ca	wdrology Indicator icators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ater Present? Present?	I Imagery (ve Surface Yes Yes Yes Yes Yes Yes	(B7) e (B8) No	Water-St 1, 2, 4 Salt Crus Aquatic II Hydroger Oxidized Presence Recent Ir Stunted C Other (Ex	ained Leaver AA, and 4B at (B11) invertebrate in Sulfide Con Reduction Reduction Stressed explain in Reduction Stressed explai	es (B13) dor (C1) eres along ed Iron (C ion in Tille I Plants (D emarks)	Living Roo 4) ad Soils (C6 01) (LRR A)	ets (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
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Project/Site: Washington Cathedral	(City/C	county:	King		Samplin	g Date: <u>2/2/201</u>	6
Applicant/Owner: BCA Redmond					State: WA	Samplin	g Point: TP8	
Investigator(s): E. Davis			s	Section, To	wnship, Range: <u>26, 26N, 5</u>	5E		
Landform (hillslope, terrace, etc.): hillslope		Loca	al relief	(concave,	convex, none): convex		Slope (%)	: <u>2-6</u>
Subregion (LRR): A	Lat: <u>47.71</u>	0719)		Long: 122.130833		Datum: NA\	/D88
Soil Map Unit Name: Bellingham								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	•			,	rmal Circumstances" pres	ent? Ye	s⊠ No□	
Are Vegetation, Soil, or Hydrology natu					d, explain any answers in			
SUMMARY OF FINDINGS – Attach site map								s, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □								
Hydric Soil Present? Yes ☐ No ☒				Sampled		- M		
Wetland Hydrology Present? Yes ☐ No ☒			withii	n a Wetlan	d? Yes ☐ No	2 🖂		
Remarks: TP taken upslope on berm slope surrounding we	etland							
VEGETATION – Use scientific names of plan	ts.							
-	Absolute				Dominance Test works	heet:		
Tree Stratum (Plot size:) 1	% Cover				Number of Dominant Spo That Are OBL, FACW, or		2	(A)
2					Total Number of Domina	ınt		
3					Species Across All Strata	a:	2	(B)
4					Percent of Dominant Spe That Are OBL, FACW, or		100	(A/B)
Sapling/Shrub Stratum (Plot size:) 1					Prevalence Index work	sheet:		
2.					Total % Cover of:		Multiply by:	
3					OBL species			_
4.					FACW species			
5					FAC species	x3	3 =	<u> </u>
					FACU species	X 4	1 =	_
Herb Stratum (Plot size: 5')	00	.,		- 40	UPL species			
Festuca arundinacea Phologic prundinacea	80				Column Totals:	(A)		(B)
Phalaris arundinacea 3					Prevalence Index	= B/A =		
4				F	Hydrophytic Vegetation		<u> </u>	
5					☐ Rapid Test for Hydro	phytic Ve	egetation	
6						50%		
7					☐ Prevalence Index is :	≤3.0¹		
8 9					☐ Morphological Adapt data in Remarks			
10					☐ Wetland Non-Vascul			
11					☐ Problematic Hydroph		` .	,
Woody Vine Stratum (Plot size:)	100				¹ Indicators of hydric soil be present, unless distur			must
1					Hydronbytic			
2					Hydrophytic Vegetation			
9/ Rara Ground in Harb Stratum		= To	otal Co	ver	Present? Yes	⊠ No		
% Bare Ground in Herb Stratum								

Profile Description: (Description Mar	triv	Redox Features		
(inches) Color (moist)		Color (moist)	Loc ²	Texture Remarks
0-16 10YR 4/3	100			elay loam
1011(1/0	100		<u>~</u>	- Indian - I
				
* :		Reduced Matrix, CS=Covered or Coated	Sand Grai	-
		RRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)		Sandy Redox (S5)		2 cm Muck (A10)
Histic Epipedon (A2)		☐ Stripped Matrix (S6)		Red Parent Material (TF2)
Black Histic (A3)	L	Loamy Mucky Mineral (F1) (except M	ILRA 1)	☐ Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)		☐ Other (Explain in Remarks)
☐ Depleted Below Dark Su☐ Thick Dark Surface (A12	, ,	☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6)		³ Indicators of hydrophytic vegetation and
☐ Sandy Mucky Mineral (S		Depleted Dark Surface (F7)		wetland hydrology must be present,
☐ Sandy Mideky Milleral (S		Redox Depressions (F8)		unless disturbed or problematic.
Restrictive Layer (if prese	•			divided distances of problematic.
Depth (inches):				Hydric Soil Present? Yes ☐ No ☒
Remarks:				Trydric con resent: Tes No
LIVER OLD COV				
	tore			
Wetland Hydrology Indica		check all that apply)		Secondary Indicators (2 or more required)
Wetland Hydrology Indica Primary Indicators (minimum			ent MIRA	Secondary Indicators (2 or more required) Water-Stained Leaves (R9) (MLRA 1.2)
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1)		☐ Water-Stained Leaves (B9) (exc	ept MLRA	☐ Water-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1) High Water Table (A2)		☐ Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B)	ept MLRA	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)		☐ Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) ☐ Salt Crust (B11)	ept MLRA	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10)
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	n of one required;	 □ Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) □ Salt Crust (B11) □ Aquatic Invertebrates (B13) 	ept MLRA	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2)
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	n of one required;	 Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	n of one required;	 Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv 		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2)
Wetland Hydrology Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	n of one required;	 Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) 	ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	n of one required;	Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6	n of one required;	Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Lin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1)	ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6	n of one required;) erial Imagery (B7)	Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Ae Sparsely Vegetated Cor	n of one required;) erial Imagery (B7)	Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indica Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Ae Sparsely Vegetated Cor	n of one required;) erial Imagery (B7) ncave Surface (B8	Water-Stained Leaves (B9) (exc 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Liv Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Stunted or Stressed Plants (D1) Other (Explain in Remarks)	ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Action Sparsely Vegetated Corfield Observations: Surface Water Present?	n of one required;) erial Imagery (B7) ncave Surface (B8 Yes □ No		ving Roots	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Ae Sparsely Vegetated Cor Field Observations: Surface Water Present?	n of one required; prial Imagery (B7) cave Surface (B8 Yes		ving Roots Soils (C6) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Ae Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present?	n of one required;) erial Imagery (B7) ncave Surface (B8 Yes □ No		ving Roots Soils (C6) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 Inundation Visible on Active Sparsely Vegetated Corfield Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	n of one required; erial Imagery (B7) ncave Surface (B8 Yes		ving Roots Soils (C6) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on A6 Sparsely Vegetated Correlated Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (st	n of one required; erial Imagery (B7) ncave Surface (B8 Yes		ving Roots Soils (C6) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 Inundation Visible on Active Sparsely Vegetated Corfield Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	n of one required; erial Imagery (B7) ncave Surface (B8 Yes		ving Roots Soils (C6) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Wetland Hydrology Indical Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on A6 Sparsely Vegetated Correlated Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (st	n of one required; erial Imagery (B7) ncave Surface (B8 Yes		ving Roots Soils (C6) (LRR A) Wetlan	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)

Project/Site: Washington Cathedral	(City/Co	ounty:	: King		Sampling Da	ate: <u>2/2/2010</u>	6
Applicant/Owner: BCA Redmond					State: WA	Sampling Po	oint: <u>TP9</u>	
Investigator(s): E.Davis			{	Section, To	wnship, Range: <u>26, 26N, 5</u>	5E		
Landform (hillslope, terrace, etc.): hillslope		Local	relief	f (concave,	convex, none): concave		Slope (%):	1-3
Subregion (LRR): A	_ Lat: <u>47.71</u>	10719			Long: <u>122.130833</u>	D	atum: NAV	'D88
Soil Map Unit Name: Bellingham					NWI classificat	tion: PEM		
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ır? Ye	s 🛛	No ☐ (If	no, explain in Remarks.)			
Are Vegetation, Soil, or Hydrology sign	nificantly dist	turbed'	?	Are "No	rmal Circumstances" pres	ent? Yes ⊠	No □	
Are Vegetation, Soil, or Hydrology natu				(If neede	ed, explain any answers in	Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing	samp	oling	g point lo	ocations, transects,	important	t feature	s, etc.
Hydrophytic Vegetation Present? Yes ☒ No ☐				. 0	A			
Hydric Soil Present? Yes ⊠ No □				e Sampled n a Wetlan		۰ 🗆		
Wetland Hydrology Present? Yes ⊠ No □			WILIII	ii a vvetiaii	id: 163 ⊠ 140	, L		
Remarks: TP was taken at base of berm that surrounds we	etland							
VEGETATION – Use scientific names of plan	ts.							
	Absolute				Dominance Test works	heet:		
Tree Stratum (Plot size:) 1	% Cover				Number of Dominant Spart That Are OBL, FACW, or			(A)
2					Total Number of Domina	ınt		
3					Species Across All Strata	a: <u>2</u>		(B)
4					Percent of Dominant Spe That Are OBL, FACW, or			(A/B)
1					Prevalence Index work	sheet:		
2					Total % Cover of:	<u>Mu</u>	Itiply by:	
3					OBL species	x 1 = _		_
4					FACW species	x 2 = _		_
5					FAC species	x 3 = _		_
Harb Otratura (Distrains 51)		= To	tal Co	over	FACU species			
Herb Stratum (Plot size: 5') 1. Phalaris arundinacea	60	V		EACW.	UPL species			
Festuca arundinacea				FAC	Column Totals:	(A) _		_ (B)
3. Juncus effusus					Prevalence Index	= B/A =		
4					Hydrophytic Vegetation	n Indicators:		
5					☐ Rapid Test for Hydro	phytic Vegeta	ation	
6					□ Dominance Test is >	50%		
7					☐ Prevalence Index is:			
8 9					☐ Morphological Adapt data in Remarks	or on a separ		
10.					Wetland Non-Vascul			
11.					☐ Problematic Hydroph			•
Woody Vine Stratum (Plot size:)	100				¹ Indicators of hydric soil be present, unless distur			nust
1					Hydrophytic			
2					Vegetation			
% Bare Ground in Herb Stratum		= To	tal Co	over	Present? Yes	No □		
% Bare Ground in Herb Stratum Remarks:								

Danilla			opuii iid	caca to acoa		ilaicatoi	OI COIIIIII	n the ab	sence of indicators.)
Depth	Matrix	(_	Rede	ox Feature	<u>s</u>			
(inches)	Color (moist)	%	Colo	or (moist)	%	Type ¹	Loc ²	Textu	re Remarks
0-11	7.5YR 3/1	95	7.5Y	'R 5/4	5	D	<u>M</u>	silt loa	m rocks in soils
11-15	7.5YR 3/1	80	<u>10Yl</u>	R 4/1	20	<u>C</u>	<u>M</u>	silt loa	m
					_				
			-						
			-						
	-								
	oncentration, D=D						ed Sand G		² Location: PL=Pore Lining, M=Matrix.
	Indicators: (App	ilicable to a				ea.)			ndicators for Problematic Hydric Soils ³ :
Histosol	` '			Sandy Redox (Stripped Matrix					2 cm Muck (A10)
☐ Black Hi	oipedon (A2)			Sinpped Mathx Loamy Mucky I	` ') (ovcon	MIDA 1		Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			Loamy Gleyed	,		WILKA I)	_	Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)		Depleted Matrix		'		_	2 Galor (Explain in Nomano)
	ark Surface (A12)	(* * * * *)		Redox Dark Su	. ,			3	ndicators of hydrophytic vegetation and
☐ Sandy M	lucky Mineral (S1)			Depleted Dark	Surface (F	7)			wetland hydrology must be present,
	Bleyed Matrix (S4)		I	Redox Depress	sions (F8)				unless disturbed or problematic.
	Layer (if present)								
,,				_					
Depth (in	ches):							Hydr	ic Soil Present? Yes ⊠ No □
Remarks:									
HYDROLO	IGY								
-	drology Indicator								
Primary Indi	drology Indicator		red; che		•				Secondary Indicators (2 or more required)
Primary Indi	drology Indicator cators (minimum o Water (A1)		red; che	☐ Water-Sta	ined Leave		xcept MLF	RA	☐ Water-Stained Leaves (B9) (MLRA 1, 2,
Primary India ☐ Surface ☐ High Wa	cators (minimum c Water (A1) ater Table (A2)		red; che	☐ Water-Sta	ined Leave A, and 4B		xcept MLF	RA	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary India ☐ Surface ☐ High Wa ☐ Saturation	cators (minimum c Water (A1) hter Table (A2) on (A3)		red; che	☐ Water-Sta 1, 2, 4 ☐ Salt Crust	ined Leave A, and 4B (B11))	xcept MLF	RA	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ☐ Drainage Patterns (B10)
Primary India ☐ Surface ☐ High Water M ☐ Water M	cators (minimum o Water (A1) ater Table (A2) on (A3) larks (B1)		red; che	☐ Water-Sta 1, 2, 4 ☐ Salt Crust ☐ Aquatic In	ined Leave A, and 4B (B11) vertebrates) s (B13)	xcept MLF	RA	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
Primary India Surface High Wa Saturatic Water M Sedimer	cators (minimum o Water (A1) hter Table (A2) on (A3) larks (B1) ht Deposits (B2)		red; che	☐ Water-Sta 1, 2, 4 ☐ Salt Crust ☐ Aquatic In ☐ Hydrogen	ined Leave A, and 4B (B11) vertebrates Sulfide Oc	s (B13) lor (C1)			 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep	cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) onosits (B3)		red; che	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F	ined Leave A, and 4B (B11) vertebrates Sulfide Oc	s (B13) lor (C1) res along	Living Roo		 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) ☑ Geomorphic Position (D2)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep	cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4)		red; che	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphel	s (B13) lor (C1) res along d Iron (C4	Living Roo 1)	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		red; che	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce	s (B13) lor (C1) res along d Iron (C4 on in Tille	Living Roo 4) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	of one requi		Water-Star 1, 2, 4 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted on	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce on Reduction	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roo 1)	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) ☑ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria	of one requi	B7)	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce on Reduction	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roo 4) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	cators (minimum of Water (A1) Inter Table (A2) Ion (A3) Idarks (B1) Int Deposits (B2) Ioosits (B3) Int or Crust (B4) Ioosits (B5) Soil Cracks (B6) Ion Visible on Aeria	of one requi	B7)	Water-Star 1, 2, 4 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted on	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce on Reduction	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roo 4) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) ☑ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	drology Indicator cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria v Vegetated Conca	of one requi	B7) (B8)	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce in Reductio Stressed blain in Re	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roo 4) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) ☑ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat	cators (minimum of cators (minim	of one requi	B7) (B8)	Water-Star 1, 2, 4 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or Other (Exp	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizosphei of Reduce on Reductio Stressed blain in Re	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roo 4) d Soils (C6	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) ☑ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Table	cators (minimum of water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concar of vations: ter Present?	of one requi	B7) (B8) No ⊠ No □	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or Other (Exp	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce on Reduction Stressed blain in Re s):s: <<.25	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roo ‡) d Soils (C6 1) (LRR A)	ots (C3)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) ☑ Geomorphic Position (D2) □ Shallow Aquitard (D3) ☑ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
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Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca) Describe Re	drology Indicator cators (minimum of cators (minimum of water (A1)) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concator ter Present? Present? Present? pillary fringe) ecorded Data (streat	al Imagery (ave Surface Yes Yes Yes Yes Amagery (B7) (B8) No ⊠ No □ Mo □	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or Other (Exp Depth (inche Depth (inche Depth (inche	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce in Reductio Stressed blain in Re s): s): <25 s): to surfa	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D marks) ce evious ins	Living Roo 4) d Soils (C6 1) (LRR A) Wetl	ots (C3) s) land Hyo	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) drology Present? Yes ☑ No □
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca) Describe Re	cators (minimum of cators (minim	al Imagery (ave Surface Yes Yes Yes Yes Amagery (B7) (B8) No ⊠ No □ Mo □	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or Other (Exp Depth (inche Depth (inche Depth (inche	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce in Reductio Stressed blain in Re s): s): <25 s): to surfa	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D marks) ce evious ins	Living Roo 4) d Soils (C6 1) (LRR A) Wetl	ots (C3) s) land Hyo	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) drology Present? Yes ☑ No □
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca) Describe Re	drology Indicator cators (minimum of cators (minimum of water (A1)) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concator ter Present? Present? Present? pillary fringe) ecorded Data (streat	al Imagery (ave Surface Yes Yes Yes Yes Amagery (B7) (B8) No ⊠ No □ Mo □	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or Other (Exp Depth (inche Depth (inche Depth (inche	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce in Reductio Stressed blain in Re s): s): <25 s): to surfa	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D marks) ce evious ins	Living Roo 4) d Soils (C6 1) (LRR A) Wetl	ots (C3) s) land Hyo	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) drology Present? Yes ☑ No □
Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Wat Water Table Saturation P (includes ca) Describe Re	drology Indicator cators (minimum of cators (minimum of water (A1)) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concator ter Present? Present? Present? pillary fringe) ecorded Data (streat	al Imagery (ave Surface Yes Yes Yes Yes Amagery (B7) (B8) No ⊠ No □ Mo □	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Irc Stunted or Other (Exp Depth (inche Depth (inche Depth (inche	ined Leave A, and 4B (B11) vertebrate: Sulfide Oc Rhizospher of Reduce in Reductio Stressed blain in Re s): s): <25 s): to surfa	s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D marks) ce evious ins	Living Roo 4) d Soils (C6 1) (LRR A) Wetl	ots (C3) s) land Hyo	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) drology Present? Yes ☑ No □

Project/Site: Washington Cathedral		City/C	ounty	r: King		Sampling Date: 2/2/20)16
Applicant/Owner: BCA Redmond					State: WA	Sampling Point: TP10)
Investigator(s): E. Davis				Section, To	ownship, Range: <u>26, 26N, </u>	5E	
Landform (hillslope, terrace, etc.): hillslope		Loca	l relie	f (concave,	convex, none): convex	Slope (%	6): <u>2-6</u>
Subregion (LRR): A	_ Lat: 47.7	10719	١		Long: <u>122.130833</u>	Datum: <u>N/</u>	AVD88
Soil Map Unit Name: Bellingham							
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	es 🛛	No ☐ (I	f no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sign	ificantly dist	turbec	!?	Are "No	ormal Circumstances" pres	sent? Yes ⊠ No □	
Are Vegetation, Soil, or Hydrology natu				(If neede	ed, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	sam	plin	g point l	ocations, transects,	important featur	es, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □							
Hydric Soil Present? Yes ☐ No ☒				e Sampled	_	- 57	
Wetland Hydrology Present? Yes ☐ No ☒			with	in a Wetlar	nd? Yes □ N	5 <u>N</u>	
Remarks: TP taken upslope south of TP9		•					
VEGETATION – Use scientific names of plant	ts.						
		Dom	inant	Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size:) 1	% Cover				Number of Dominant Sp That Are OBL, FACW, o		_ (A)
2					Total Number of Domina	ant	
3					Species Across All Strat	a: <u>1</u>	_ (B)
4					Percent of Dominant Sp	ecies	
Sapling/Shrub Stratum (Plot size:)		= Tc	otal C	over	That Are OBL, FACW, o	or FAC: 100	_ (A/B)
1					Prevalence Index work	sheet:	
2					Total % Cover of:	Multiply by:	
3					OBL species	x 1 =	
4					FACW species		
5					FAC species		
Herb Stratum (Plot size: 5')		= To	otal C	over	FACU species		
1. Festuca arundinacea	85	Υ		FAC	UPL species		
Phalaris arundinacea		N			Column Totals:	(A)	(B)
3. Agrostis stolonifera					Prevalence Index	= B/A =	
4					Hydrophytic Vegetation	n Indicators:	
5					☐ Rapid Test for Hydro	ophytic Vegetation	
6					Dominance Test is >		
7					Prevalence Index is		
8					☐ Morphological Adapt data in Remarks	tations¹ (Provide suppo or on a separate shee	
9					☐ Wetland Non-Vascul	·	/
10					☐ Problematic Hydroph	nytic Vegetation1 (Expl	ain)
11					¹ Indicators of hydric soil		y must
Woody Vine Stratum (Plot size:)	100				be present, unless distur	rbed or problematic.	
1					Hydrophytic		
2					Vegetation Present? Yes	s⊠ No □	
% Bare Ground in Herb Stratum		= 10	otal C	over	riesent: fes		
Remarks:					1		

Depth	cription: (Describ Matrix	e to the d	epth ne		nent the ii x Features		or confir	m the at	sence	e of indicators.)
(inches)	Color (moist)	%	Colc	or (moist)			Loc ²	Textu	re	Remarks
0-14	10YR 4/3	100		<u> </u>				clay lo		
<u> </u>	1011111110							olay lo	<u>um</u>	
					·					
·	-		-					-		
	-							-		·
	oncentration, D=De						ed Sand G			ocation: PL=Pore Lining, M=Matrix.
-	Indicators: (Appl	icable to				ed.)				ors for Problematic Hydric Soils ³ :
Histosol	, ,			Sandy Redox (S						m Muck (A10)
	pipedon (A2)			Stripped Matrix	. ,			_		d Parent Material (TF2)
☐ Black Hi	, ,			Loamy Mucky M			MLRA 1)			y Shallow Dark Surface (TF12)
	n Sulfide (A4) d Below Dark Surfa	00 (111)		Loamy Gleyed N Depleted Matrix				L	_ Oth	er (Explain in Remarks)
•	ark Surface (A12)	Ce (ATT)		Redox Dark Sur	. ,			3	ndicat	ors of hydrophytic vegetation and
	fucky Mineral (S1)			Depleted Dark S	, ,	7)				and hydrology must be present,
	Gleyed Matrix (S4)			Redox Depressi	•	,				ss disturbed or problematic.
	Layer (if present):	 								
Type:				_						
Depth (in	ches):							Hydi	ic Soi	il Present? Yes □ No ⊠
Remarks:								,		
HYDROLO										
_	drology Indicators cators (minimum of		ired: che	eck all that appl	v)				Seco	ondary Indicators (2 or more required)
☐ Surface	•	Ono roqu	1100, 011	☐ Water-Stair		s (R9) (a	vcent MI I	RΔ		Vater-Stained Leaves (B9) (MLRA 1, 2,
	iter Table (A2)				, and 4B)		KOOPI IIILI	NA .	ш •	4A, and 4B)
☐ Saturation	` '			☐ Salt Crust (•					Orainage Patterns (B10)
	arks (B1)			Aquatic Inv	'	(B13)				Dry-Season Water Table (C2)
	nt Deposits (B2)			☐ Hydrogen S		. ,				Saturation Visible on Aerial Imagery (C9)
	posits (B3)			☐ Oxidized R			Living Roc	nte (C3)		Geomorphic Position (D2)
	at or Crust (B4)			☐ Presence of		_	-	,,, (00)		Shallow Aquitard (D3)
_	oosits (B5)			☐ Recent Iron				3)		FAC-Neutral Test (D5)
	Soil Cracks (B6)			☐ Stunted or			,	,		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery	(B7)	Other (Exp		•	·/ (=\\\\ A	',		Frost-Heave Hummocks (D7)
	Vegetated Conca			Culci (Exp	iani ni NGN	iaino)			_ '	Took House Hammooks (D1)
Field Obser		ve Garrage	(50)							
Surface Wat		Yes 🗌	No 🛛	Depth (inches	١٠					
Water Table			No ⊠	Depth (inches			144-4	land III	- ا مراام	wy Drocont 2 Van 🗆 Na 💆
Saturation P (includes ca	resent? pillary fringe)	Yes ∐	No 🛚	Depth (inches)·		vvet	iand Hy	urol00	gy Present? Yes ☐ No ☒
	corded Data (strea	m gauge,	monitor	ring well, aerial p	ohotos, pre	evious ins	spections),	, if availa	able:	
Remarks:										

Attachment B - Wetland Rating Forms / Figures

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A	Date of site visit: <u>1/27/</u> 2016
Rated by E. Davis	_ Trained by Ecology? <u>X</u> YesNo Date of training <u>4/2011</u>
HGM Class used for rating Slope	Wetland has multiple HGM classes?Y _xN
NOTE: Form is not complete witho Source of base aerial photo/map	ut the figures requested <i>(figures can be combined).</i> Google Earth
OVERALL WETLAND CATEGORY	(based on functions X or special characteristics)
1. Category of wetland based on Fl	
Category I – Total score	= 23 - 27 Score for each
Category II - Total score	Score for each function based

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	
Site Potential	H M L	н м 🕕	H M L	
Landscape Potential	H M L	H M L	H M L	
Value	H M L	H M L	H M L	TOTAL
Score Based on Ratings	6	5	4	15

Category III – Total score = 16 - 19

X Category IV – Total score = 9 - 15

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	I II	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
None of the above	Х	

Maps and figures required to answer questions correctly for Western Washington

<u>Depressional Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		1
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	\$ 3.3	5

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you

, ,	le HGM classes. In this case, identify which hydrologic criteria in estion 8.
1. Are the water levels in the enti	e unit usually controlled by tides except during floods?
NO- go to 2	YES – the wetland class is Tidal Fringe – go to 1.1
1.1 Is the salinity of the water du	ring periods of annual low flow below 0.5 ppt (parts per thousand)?
NO – Saltwater Tidal Fringe	(Estuarine) YES – Freshwater Tidal Fringe
3	ed as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it an Estuarine wetland and is not scored. This method cannot be used to vetlands.
2 The entire wetland unit is flat a	nd precipitation is the only source (>90%) of water to it. Groundwater

and surface water runoff are NOT sources of water to the unit.

 $NO \rightarrow go to 3$

YES – The wetland class is **Flats**

If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - __The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size:
 - __At least 30% of the open water area is deeper than 6.6 ft (2 m).

(NO -) go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - <u>x</u> The wetland is on a slope (*slope can be very gradual*),
 - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 - **x** The water leaves the wetland **without being impounded**.

NO - go to 5

YES The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river.
 - __The overbank flooding occurs at least once every 2 years.

Wetland name or number Wetland A

NO go to 6

YES - The wetland class is Riverine

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

(NO)- go to 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

YES - The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.

SLOPE WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality	
S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance) Slope is 1% or less Slope is > 1%-2% Slope is > 2%-5% Slope is greater than 5% points = 0	1
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions): Yes = 3 No = 0	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.	
Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ¼ of area Dense, uncut, herbaceous plants > ¼ of area Does not meet any of the criteria above for plants points = 0	1
Total for S 1 Add the points in the boxes above	2

Rating of Site Potential If score is: ___12 = H ____6-11 = M __X _0-5 = L

Record the rating on the first page

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources Parking areas Yes = 1 No = 0	
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: X 1-2 = M ___0 = L

Record the rating on the first page

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? <i>Answer YES</i> if there is a TMDL for the basin in which unit is found. Yes = 2 No = 0	0
Total for S 3 Add the points in the boxes above	2

Rating of Value If score is: <u>X_2-4 = H___1 = M___0 = L</u>

Record the rating on the first page

SLOPE WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream eros	sion
S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > $^{1}/_{8}$ in), or dense enough, to remain erect during surface flows.	
Dense, uncut, rigid plants cover > 90% of the area of the wetland points = 1 All other conditions points = 0	0

Rating of Site Potential If score is: ___1 = M __X_0 = L

Record the rating on the first page

S 5.0. Does the landscape have the potential to support the hydrologic fu	nctions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses surface runoff?	or cover that generate excess Yes = 1 No = 0	1
Rating of Landscape Potential If score is: X 1 = M0 = L	Record the rating on	the first page

S 6.0. Are the hydrologic functions provided by the site valuable to society?

S 6.1. Distance to the nearest areas downstream that have flooding problems:

The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds)

Surface flooding problems are in a sub-basin farther down-gradient
No flooding problems anywhere downstream

S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

Total for S 6

Add the points in the boxes above

Rating of Value If score is: 2-4 = H X 1 = M 0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat H 1.0. Does the site have the potential to provide habitat? H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 **X**_Emergent 3 structures: points = 2 0 ____Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods). ____Permanently flooded or inundated 4 or more types present: points = 3 **X** Seasonally flooded or inundated 3 types present: points = 2 _x_Occasionally flooded or inundated 2 types present: points = 1 2 __X_Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ___Lake Fringe wetland 2 points Freshwater tidal wetland 2 points H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle 0 If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0 H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high. 0 None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row are HIGH = 3points

Wetland name or number Wetland A

H 1.5. Special habitat features:		
Check the habitat features that are present in the wetland. <i>The number of checks is the</i>	number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).		
Standing snags (dbh > 4 in) within the wetland		
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants exter		
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)		
Stable steep banks of fine material that might be used by beaver or muskrat for den		0
slope) OR signs of recent beaver activity are present <i>(cut shrubs or trees that have i</i>	not yet weathered	U
where wood is exposed)		
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in a	reas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)		
Invasive plants cover less than 25% of the wetland area in every stratum of plants (s	see H 1.1 for list of	
strata) Total for H 1 Add the poin	ts in the boxes above	2
		2
Rating of Site Potential If score is:15-18 = H7-14 = Mx_0-6 = L	Record the rating on a	tne tirst page
H 2.0. Does the landscape have the potential to support the habitat functions of the si	te?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).		
Calculate: .0 % undisturbed habitat $\frac{20}{20}$ + [(% moderate and low intensity land use	s)/2] =10_%	
If total accessible habitat is:		
> ¹ / ₃ (33.3%) of 1 km Polygon	points = 3	
20-33% of 1 km Polygon	points = 2	0
10-19% of 1 km Polygon	points = 1	
< 10% of 1 km Polygon	points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.		
Calculate: 15 % undisturbed habitat 25 + [(% moderate and low intensity land use	s)/2] =27.5 %	
Undisturbed habitat > 50% of Polygon	points = 3	
Undisturbed habitat 10-50% and in 1-3 patches	points = 2	1
Undisturbed habitat 10-50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of 1 km Polygon	points = 0	
H 2.3. Land use intensity in 1 km Polygon: If		
> 50% of 1 km Polygon is high intensity land use	points = (- 2)	0
≤ 50% of 1 km Polygon is high intensity	points = 0	· ·
Total for H 2 Add the poin	ts in the boxes above	1
Rating of Landscape Potential If score is:4-6 = H1-3 = M _ \times < 1 = L	Record the rating on th	ne first page
H 3.0. Is the habitat provided by the site valuable to society?		- 1
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose that applies to the wetland heing rated</i>	only the highest score	
that applies to the wetland being rated.	nointo O	
Site meets ANY of the following criteria:	points = 2	
— It has 3 or more priority habitats within 100 m (see next page)	a akaka amfa di walikiki	
— It provides habitat for Threatened or Endangered species (any plant or animal on the	e state or federal lists)	
It is mapped as a location for an individual WDFW priority species It is a Westlered of Uish Consequenting Value and determined by the Department of Nets	mal Danas make	
— It is a Wetland of High Conservation Value as determined by the Department of Natu		1
It has been categorized as an important habitat site in a local or regional comprehens Shareline Mester Plan, or in a watershed plan.	isive pian, in a	
Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m	points = 1	
	·	
Site does not meet any of the criteria above	points = 0	the first re-
Rating of Value If score is:2 = HX _1 = M0 = L	Record the rating on	ıne nrst page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: *NOTE:* This question is independent of the land use between the wetland unit and the priority habitat.

- **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: Old-growth west of Cascade crest Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Westland Time	Catamami
Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 (No=)Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No-Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- 	Cat. I
mowed grassland.	Cat. II
— The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 2.2 (No) Go to SC 2.3	Cat. I
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 (No ≱ Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website? Yes = Category I (No) Not a WHCV	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key</i>	
below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or	
more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 3.3 (No)= Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog No Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
plant species in Table 4 are present, the wetland is a bog.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No No Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i>	
 Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon <i>(needs to be measured near the bottom)</i> Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
 SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). 	Cat. II
 At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. The wetland is larger than ¹/₁₀ ac (4350 ft²) 	
Yes = Category I No= Category II	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:	
 Long Beach Peninsula: Lands west of SR 103 Grayland-Westport: Lands west of SR 105 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to SC 6.1 No = not an interdunal wetland for rating	Cat I
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No Go to SC 6.2	Cat. II
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No—Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	Cat. III
Yes = Category III No= Category IV	Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

Wetland name or number	
	This page left blank intentionally

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B	Date of site visit: <u>2/2/2</u> 016
Rated by E. Davis	Trained by Ecology?_X YesNo Date of training_4/2011
HGM Class used for rating Depressiona	Wetland has multiple HGM classes?Y _xN
NOTE: Form is not complete witho Source of base aerial photo/map	ut the figures requested (figures can be combined). Google Earth
OVERALL WETLAND CATEGORY <u>III</u>	(based on functions_x_ or special characteristics)
1. Category of wetland based on FLCategory I – Total score	

FUNCTION	Improving Water Quality		Ну	drol	ogic		Habita	t		
			<u> </u>	(Sircle	the ap	prop	riate ra	tings	
Site Potential	Н	M	L	Н	M	(L)	Н	М	<u> </u>	
Landscape Potential	Н	M	L	\bigcirc	M	L	Н	M	L	
Value	\bigoplus	M	L	Н	M	L	Н	M	L	TOTAL
Score Based on Ratings		7		6			;	5		18

_Category II - Total score = 20 - 22

Category IV - Total score = 9 - 15

X Category III – Total score = 16 - 19

Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H 8 = H,H,M 7 = H,H,L 7 = H,M,M 6 = H,M,L 6 = M,M,M 5 = H,L,L 5 = M,M,L 4 = M,L,L 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY	
Estuarine	I II	
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest	I	
Coastal Lagoon	I II	
Interdunal	I II III IV	
None of the above	X	

Maps and figures required to answer questions correctly for Western Washington

<u>Depressional Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	2
Map of the contributing basin	D 4.3, D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	_
polygons for accessible habitat and undisturbed habitat		4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	\$ 3.3	

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

questions 1-7 apply, an	d go to Question 8.
1. Are the water levels i	n the entire unit usually controlled by tides except during floods?
NO go to 2	YES – the wetland class is Tidal Fringe – go to 1.1
1.1 Is the salinity of the	water during periods of annual low flow below 0.5 ppt (parts per thousand)?
If your wetland can	lal Fringe (Estuarine) YES – Freshwater Tidal Fringe be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it ringe it is an Estuarine wetland and is not scored. This method cannot be used to estuarine wetlands.
	nit is flat and precipitation is the only source (>90%) of water to it. Groundwater noff are NOT sources of water to the unit.
NO- go to 3 If your wetland can be	YES – The wetland class is Flats e classified as a Flats wetland, use the form for Depressional wetlands.
The vegetated part plants on the surfa	nd unit meet all of the following criteria? of the wetland is on the shores of a body of permanent open water (without any ce at any time of the year) at least 20 ac (8 ha) in size; open water area is deeper than 6.6 ft (2 m).
NO)- go to 4	YES – The wetland class is Lake Fringe (Lacustrine Fringe)
The wetland is on The water flows the seeps. It may flow	nd unit meet all of the following criteria? a slope (<i>slope can be very gradual</i>), brough the wetland in one direction (unidirectional) and usually comes from subsurface, as sheetflow, or in a swale without distinct banks, the wetland without being impounded .
NO) go to 5	YES – The wetland class is Slope
	does not pond in these type of wetlands except occasionally in very small and or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft
	nd unit meet all of the following criteria? lley, or stream channel, where it gets inundated by overbank flooding from that

_The overbank flooding occurs at least once every 2 years.

NO)- go to 6

YES – The wetland class is Riverine
NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO - go to 8

YES - The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.

DEDDECCIONIAL AND ELATE METIANDE	
DEPRESSIONAL AND FLATS WETLANDS Water Quality Functions Indicators that the site functions to improve water quality	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. <u>Characteristics of surface water outflows from the wetland</u> :	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	
points = 2	1
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	0
D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes):	
Wetland has persistent, ungrazed, plants > 95% of area points = 5	
Wetland has persistent, ungrazed, plants $> \frac{1}{2}$ of area points = 3	5
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1	
Wetland has persistent, ungrazed plants $<^{1}/_{10}$ of area points = 0	
D 1.4. <u>Characteristics of seasonal ponding or inundation</u> :	
This is the area that is ponded for at least 2 months. See description in manual.	
Area seasonally ponded is > ½ total area of wetland points = 4	2
Area seasonally ponded is > ¼ total area of wetland points = 2	
Area seasonally ponded is < ¼ total area of wetland points = 0	
Total for D 1 Add the points in the boxes above	8
Rating of Site Potential If score is:12-16 = HX6-11 = M0-5 = L	age
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?	
Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2
Rating of Landscape Potential If score is:3 or 4 = Hx _1 or 2 = M0 = L Record the rating on the Record th	
D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the	1
303(d) list? Yes = 1 No = 0	
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	2
Rating of Value If score is: X 2-4 = H1 = M0 = L Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradations.	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in)	0
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit The area of the basin is 10 to 100 times the area of the unit The area of the basin is more than 100 times the area of the unit Entire wetland is in the Flats class D 4.3. Contribution of the area of upstream basin contribution of the area of upstream basin points = 5	3
Total for D 4 Add the points in the boxes above Rating of Site Potential If score is: 12-16 = H 6-11 = M X 0-5 = L Record the rating on the	first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	- Page
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	3
Rating of Landscape Potential If score is: X 3 = H1 or 2 = M0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. • Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	1
There are no problems with flooding downstream of the wetland. points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: 2-4 = H $X_1 = M$ 0 = L

Record the rating on the first page

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat H 1.0. Does the site have the potential to provide habitat? H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 **X**_Emergent 3 structures: points = 2 ____Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 0 Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods). ____Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 3 types present: points = 2 X Occasionally flooded or inundated 2 types present: points = 1 2 **X** Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ___Lake Fringe wetland 2 points Freshwater tidal wetland 2 points H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle 0 If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high. 0 None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row are HIGH = 3points

Wetland name or number Wetland B

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m)	
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	
where wood is exposed)	0
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	2
Rating of Site Potential If score is:15-18 = H7-14 = MX_0-6 = L	
	the mst page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).	
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] =%	
If total accessible habitat is:	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	
20-33% of 1 km Polygon points = 2	1
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate: % undisturbed habitat + (% moderate and low intensity land uses)/2] =%	
Undisturbed habitat > 50% of Polygon points = 3	
· · · · · · · · · · · · · · · · · · ·	1
Undisturbed habitat 10-50% and in 1-3 patches points = 2	
Undisturbed habitat 10-50% and > 3 patches points = 1	
Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If	
> 50% of 1 km Polygon is high intensity land use points = (- 2)	0
≤ 50% of 1 km Polygon is high intensity points = 0	
Total for H 2 Add the points in the boxes above	3
Rating of Landscape Potential If score is:4-6 = HX_1-3 = M< 1 = L	he first page
H 3.0. Is the habitat provided by the site valuable to society?	-
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score</i>	
that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	
It has 3 or more priority habitats within 100 m (see next page)	
It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	
It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	14
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan	
Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1	
Site does not meet any of the criteria above points = 0	

Rating of Value If score is: $_{2} = H \times _{1} 1 = M \times _{2} 0 = L$

points = 0

Record the rating on the first page

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: *NOTE:* This question is independent of the land use between the wetland unit and the priority habitat.

- **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds**: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: Old-growth west of Cascade crest Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 see web link above*).
- X **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

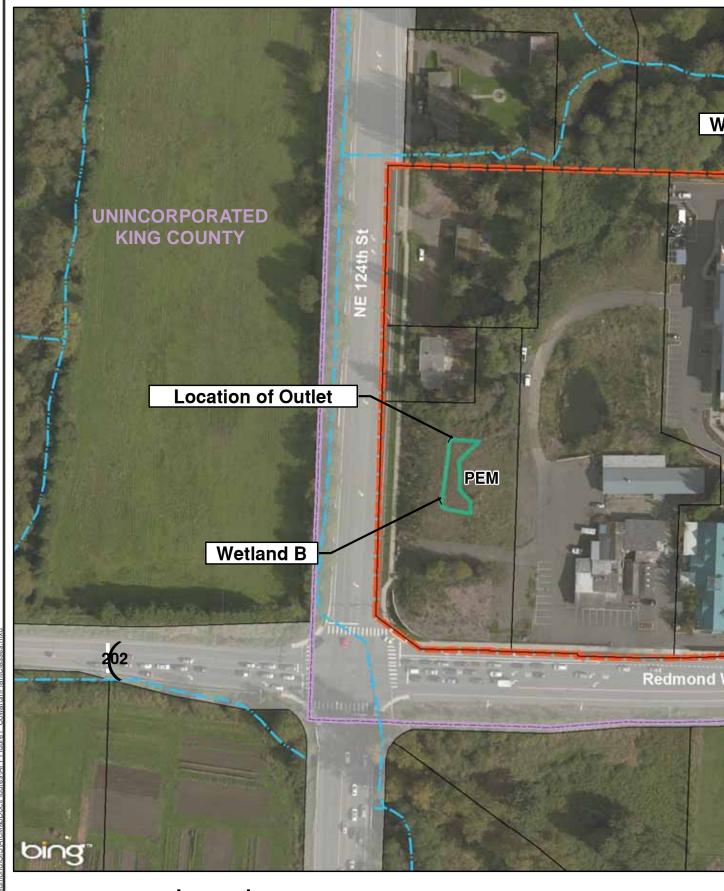
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met. SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes—Go to SC 1.1 No—Not an estuarine wetland SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes—Category I No—Go to SC 1.2 SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least % of the landward edge of the wetland has a 100 It buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No—Category II SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes = Cotegory I No—No ta WHCV SC 2.2. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dim.wa.gov/inlp/refdesk/datasacrach/venlpwetlands.pdf Yes—Go to SC 2.4 No—No ta WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes—Co to SC 3.3 No—So to a WHCV SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you are uncertain about the wetland has a bog or you can are a within the wetland unit have organic soil horizons, eith	Wetland Type	Catagory
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SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-1517 Yes – Category I No – Go to SC 1.2 Cat. I SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least 34 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. **Yes = Category I** No = Category II** **SC 2.0. Wetlands of High Conservation Value (WHCV) **SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? **Yes = Category I** No = Not a WHCV **SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? **Yes = Category I** No = Not a WHCV **SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? **http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf **Yes = Contact WNIHP/WDNR and go to SC 2.4** No = Not a WHCV **SC 3.0. Bogs** **Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? **Use the key below. If you answer YES you will still need to rate the wetland based on its functions. **SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? **Yes = Go to SC 3.3** No = Is not a bog **SC 3.3. Does an area within the wetland unit have organic soils, either peats or mucks, that are least than 16 in deep over bedrock, or an impe	· · · · · · · · · · · · · · · · · · ·	
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SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i>	
 Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon <i>(needs to be measured near the bottom)</i> Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
 At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. The wetland is larger than ¹/₁₀ ac (4350 ft²) 	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:	
 Long Beach Peninsula: Lands west of SR 103 Grayland-Westport: Lands west of SR 105 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to SC 6.1 No = not an interdunal wetland for rating 	Cat I
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2	Cat. II
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	Cat. III
Yes = Category III No = Category IV	Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA

Wetland name or number	
	This page left blank intentionally

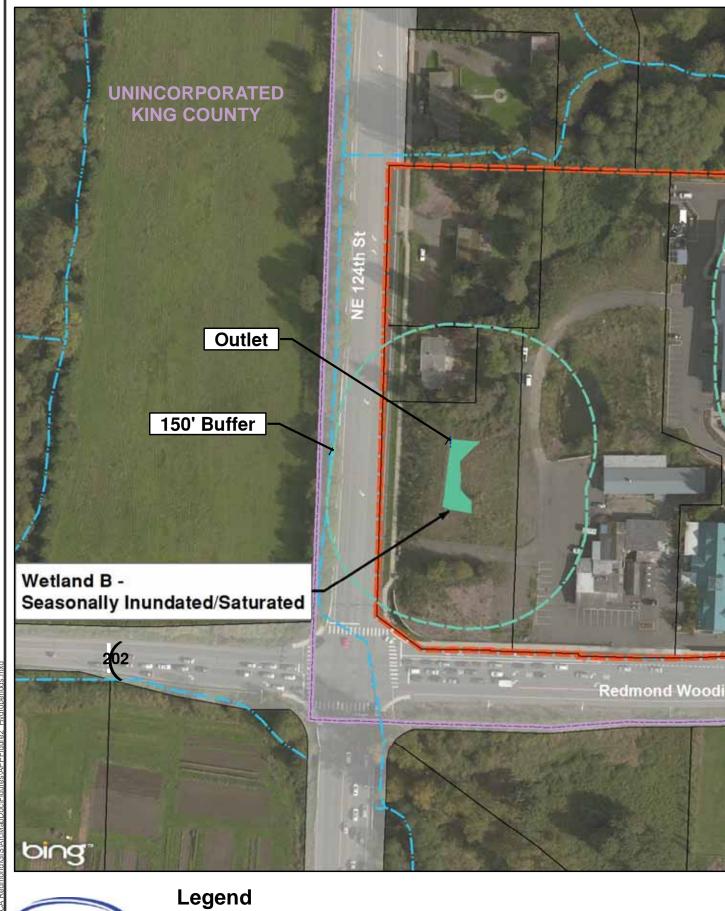




Legend

Redmond City Limit Study Area ---- Streams (C

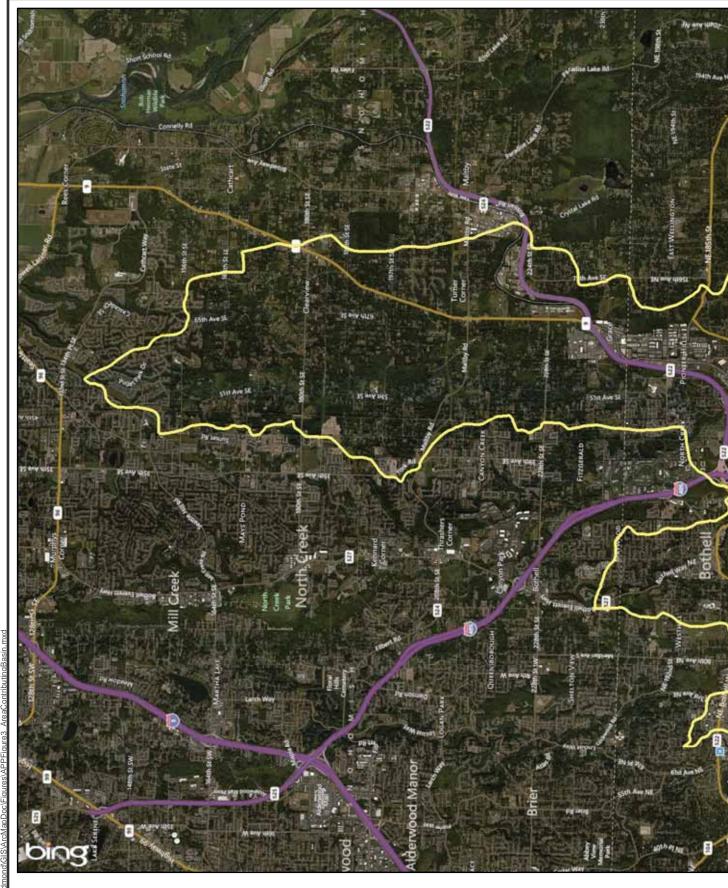










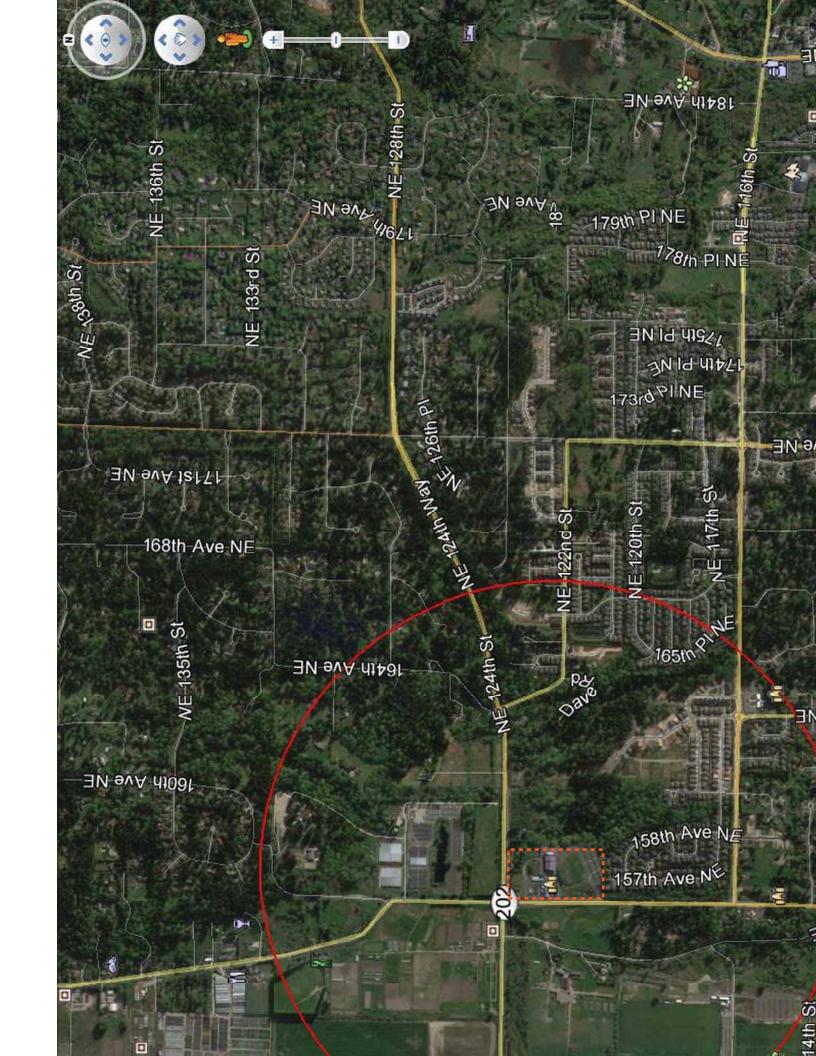


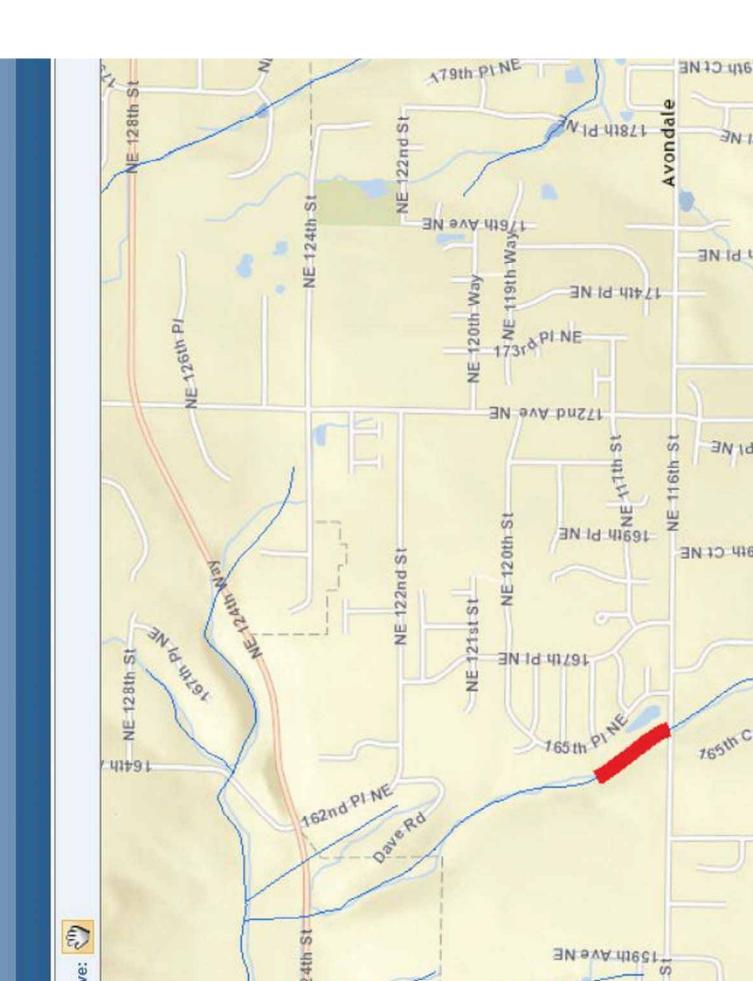


Legend

Bear Creek-Sammamish River Basin







Programs Services Publications & Forms Databases Laws & Rules Public Involvement Calendar Public Records

Home WATER AIR

WASTE | CLEANUP | TOXIC HAZARDS GREEN

About Us Jobs

WATER QUALITY IMPROVEMENT

Project Catalog

by WRIA

by County Funding Opportunities

PROJECTS (TMDLs) Overview of the process

Water Quality Improvement Projects (TMDLs)

Water Quality Improvement > Water Quality Improvement Projects by WRIA > WRIA 8: Cedar-Sammamish

WRIA 8: Cedar-Sammamish

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a protect.

Counties

- King
- Snohomish



RELATED ECOLOGY **PROGRAMS**

Project Development Priority Lists

Related Information TMDL Contacts

Water Quality

Waterbody Name	Pollutants	Status××	TMDL Lead
Ballinder Lake	Total Phesphorus	Approved by EPA	Tricia Shoblam 425-649-7288
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan
	Dissolved Oxygen Temperature	Approved by EPA	425-649-4425
Cottage Lake	Total Phosphorus	Approved by EPA Has an implementation plan	Tricia Shobiam 425-649-7288
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan 425-649-4425
Uttle Bear Creek Tributaries: Trout Stream Great Cone Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Raigh Syricek 425-649-7036
North Creek	Fecal Coliform	Approved by EPA Has an implementation pren	Raion Syricek 425-649-7036
Places Creek	Fecal Coliform	Approved by EPA	Joan Noten 425-649-4425
Sammamish River	Dissolved Oxygen Temperature	Field work starts summer 2015	8aiph Syricek 425-649-7036
Swamp Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrjcek 425-649-7036

^{**} Status will be listed as one of the following: Approved by EPA, Linder Development or Implementation

For more information about WRIA 8:

- Waterbooles In WRIA 8 using the Water Quality Assessment Query Tool
- Watershed Information for WRIA 8

₹ The Department of Ecology and other state resource agencies frequently use a system of 62 "Water Resource Inventory Areas" or "WRIAs" to refer to the state's major watershed basins.

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Last updated July 2015

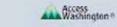












Appendix C - Historical and Study Area Photographs

Historical Photos





Site development 2007 (Google Earth) no evidence of wetland



Site development 2009 (Google Earth) – no evidence of wetland



Site development 2011 (Google Earth)



Site construction activities and stream restoration project 2010-2011 (Bing Maps) – no evidence of wetland

Existing Site Conditions



Detention Pond at west entrance to study area, south of driveway entrance



Detention pond at west entrance to study area, north of driveway entrance



Detention ponds at west study area entrance, looking southwest



North end of Wetland A, looking west, adjacent to walkway



North end of Wetland A, looking west across drainage feature



Wetland A, looking southeast



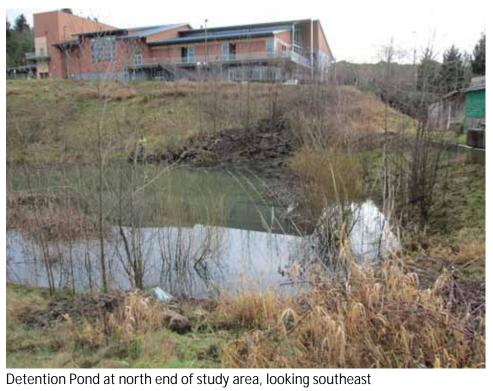
East end of Wetland A looking northwest



East end of Wetland A showing surface water, looking northwest



Detention pond at north end of study area, looking northeast





Wetland B, looking east, shows berm surrounding wetland



Wetland B showing surface water, looking east



Wetland B showing berm to left, looking southeast



Wetland B showing rock lined outfall, looking east towards ravine

Appendix D - Washington Department of Fish and Wildlife PHS Report

TMENT OF FISH AND WILDLIFE ND SPECIES REPORT

Query ID: P160205163425

Priority Area Occurrence Type More Information (URL) Mgmt Recommendations	Accuracy	Federal Status State Status PHS Listing Status	Sensitive Data Resolution	Source Entity Geometry Type
Aquatic Habitat	NA	N/A	N AC MARRED	US Fish and Wildlife Service
Aquatic habitat		N/A	AS MAPPED	Polygons
http://www.ecy.wa.		PHS Listed		
Aquatic Habitat	1/4 mile (Quarter	N/A	N	WA Dept. of Fish and Wildlife
N/A		N/A	AS MAPPED	Polygons
http://www.ecy.wa.		PHS LISTED		

Vashington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response in information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish nown to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necesssary to rule out the life resources are subject to vraition caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than

WDFW Test Map



February 5, 2016

PHS Report Clip Area AS MAPPED TOWNSHIP

PT SECTION

O 0.

WDFW

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